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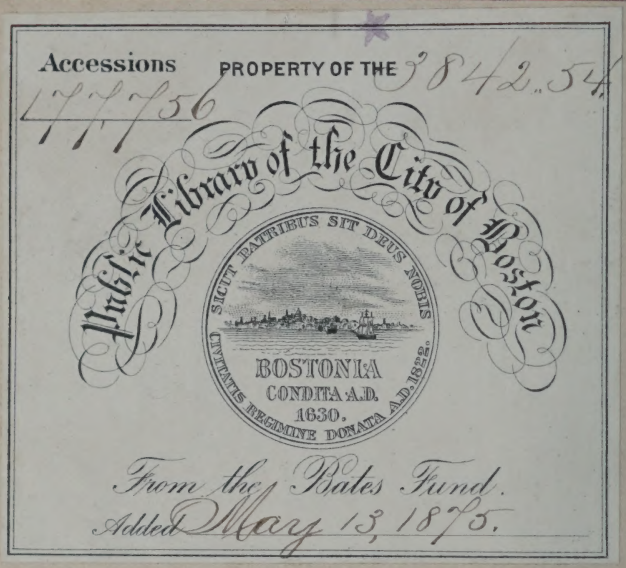

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THE NARCISSUS.

N. (CORBULARIA) BULBOCODIUM.

THE NARCISSUS:

ITS

HISTORY AND CULTURE

WITH

COLOURED PLATES AND DESCRIPTIONS OF ALL KNOWN SPECIES AND PRINCIPAL VARIETIES.

3842.54

BY

F. W. BURBIDGE,

AUTHOR OF "DOMESTIC FLORICULTURE," "COOL ORCHIDS: AND HOW TO GROW THEM," ETC.

TO WHICH IS ADDED, BY KIND PERMISSION, A

SCIENTIFIC REVIEW OF THE ENTIRE GENUS,

BY

J. G. BAKER, F.L.S.

OF THE ROYAL HERBARIUM, KEW.

LONDON:

L. REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.

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SELECT DESCRIPTIVE LIST OF AUTHORS, WORKS OF REFERENCE AND ILLUSTRATED PERIODICALS, CONTAINING VALUABLE INFORMATION AND FIGURES OF THE SPECIES OF NARCISSUS 89

"There hath beene great confusion among many of our moderne Writers of Plants in not distinguishing the manifold varieties of Daffodils; for euery one almost, without consideration of kinde or forme, or other speciall note, giveth names to diursify one from another, that if any one shall receive from severall places the Catalogues of their names (as I haue had many) as they set them down, and compare the one Catalogue with the other, he shall scarce haue three names in a dozen to agree together, one calling that by one name which another calleth by another, that very few can tell what they meane."

John Parkinson in *Parad. Terr.* ed. 1, p. 67, A.D. 1629.

PREFACE.

In offering this short history of a popular genus of hardy bulbs, my object has been to assist horticulturists and amateurs by adding coloured figures to the excellent review of the genus which originally appeared in the "Gardeners' Chronicle" (1869) from the careful pen of J. G. Baker, Esq., F.L S., of the Royal Herbarium, Kew. The plates, representing all the species at present in cultivation in this country, have been prepared from fresh specimens, while the figures of the autumn blooming kinds, and one or two others not yet introduced to our gardens, have been made from the comprehensive series of dried specimens in the Kew Herbarium, or from authentic drawings. Cultural and other details likely to interest the amateur cultivator have also been added, and to further assist those who wish to refer to the literature of the Narcissus, a select list of botanical and other works in which much useful information may be obtained is given. To J. G. Baker, Esq., F.L.S., and Dr. M. T. Masters, F.L.S., I am especially indebted for kind assistance and valuable information, and my best thanks are also due to Mr. P. Barr, F.R.H.S., who very liberally supplied me with numerous fresh specimens of all the cultivated species together with valuable hints on the culture, variations, and nomenclature of garden forms. I am also indebted to the Rev. Harpur Crewe, Rev. H. Ellacombe, Mr. J. Tyerman, and to Dr. D. Moore of the Botanic Gardens Dublin, for fresh specimens and useful information.

F. W. B.

London, 1875.

EXPLANATION OF PLATES.

PLATE I.—A. **Narcissus Bulbocodium.** (Two forms, the margin of the corona being entire and wavy in one, and distinctly lobed or crenulate in the other.) 1. Perianth segment; 2. section of leaf, enlarged. B. **N. Bulbocodium, var. lobulata.** (This is a dwarf and distinct form with more slender flowers and foliage than in the type.) 1. Perianth segment; 2, section of leaf, enlarged. C. **N. Bulbocodium, var. conspicua.** 1. Perianth segment; 2. section of leaf, enlarged.

PLATE II.—**N. Bulbocodium, var. monophyllus.** (Partly after Fitch in "Florist," 1870, p. 85.) 1. Section of flower; 2. perianth segments; 3. section of leaf—all enlarged.

PLATE III.—**N. Pseudo-Narcissus.**—A. A wild form. B. and C. Cultivated forms. 1. Section of flower; 2. perianth segments; 3. section of leaf; 4. section of flower-scape—all enlarged.

PLATE IV.—**N. Pseudo-Narcissus,** A. **var. major.** B. var. (*obvallaris*) **maximus.** (The specimens from which the Plate was prepared were from two to three feet in height and very robust, so that the space at command only allows mere fragments of the plant to be here represented.) 1. Section of scape; 2. section of leaf.

PLATE V.—**N. Pseudo-Narcissus.** A. **var. minor.** 1. perianth segments. B. **var. minimus.** 1. Perianth segments; 2. (*Ajax*) var. **cuneifolius** (after Herbert); 3. (*Ajax*) var. **pumilus** (after Herbert). The two last varieties are figured in Herbert's "Amaryllidaceæ," t. 39 and t. 43, and are there represented with white perianth segments and a yellow cup. They are smaller than any variety of *N. Pseudo-Narcissus* now in cultivation, unless they represent pallid forms of our variety *N. Pseudo-Narcissus* var. *minimus*.

PLATE VI.—**N. Pseudo-Narcissus, var. bicolor.** 1. Perianth lobes; 2. section of leaf. (This is a Linnæan species but, however distinct it may look in our Plate, it is united with the common type of *N. Pseudo-*

Narcissus by a series of pale coloured forms. Mr. J. Tyerman sent me two forms of *N. Pseudo-Narcissus* from Tregoney with pale sulphur-tinted perianth segments and clear yellow cups, and these were exactly intermediate links in the chain which unites this beautiful variety with the common type of the species.

PLATE VII.—**N. Pseudo-Narcissus, var. moschatus.** A. A newly opened flower. B. An older flower showing change of colour. 1. Perianth segments; 2. section of leaf, all natural size.

PLATE VIII.—**N. Pseudo-Narcissus, var. cernuus.** 1. Perianth segments; 2. section of leaf, all natural size.

PLATE IX.—**N. Pseudo-Narcissus.** A. var. "Empress." B. var. "Emperor." 1. Perianth segment; 2. section of leaf, all natural size. (These are the finest selected seedling forms of the common Daffodil, and deserve culture in every garden where hardy bulbs are grown.)

PLATE X.—**N. Pseudo-Narcissus.** A. var. flore-pleno. B Another form of the same plant, the multiplication of parts being confined inside the corona, which is merely an accidental occurrence common to all the double-flowered forms of the present species. C. and D. Another distinct form of the common Daffodil in which the multiplication of parts is confined to the perianth, while the corona is entirely suppressed. This is the *Ajax Eystettensis* of Herbert and is now in cultivation. 1. **var. abscissus** (clipt trunk); 2. **var. laciniatus** (fringed trunk).

PLATE XI.—**N. Pseudo-Narcissus, var. grandiplenus.** (Large double Daffodil.) (The flower of this monstrous variety is often much larger than here shown with several centres, and thick green segments are often interspersed among the yellow ones.)

PLATE XII.—**N. Pseudo-Narcissus, var. cernuus-plenus.** The left hand figure represents an accidental form with a double row of perianth segments, and is known in gardens as "*plenus bicinctus*."

PLATE XIII.—**N. Pseudo-Narcissus, var. Telamonius-plenus.** (Large pale-pointed double Daffodil.) This is the common double Daffodil, and is very common in some old-fashioned gardens. The single form is nearly related to *N. Pseudo-Narcissus*, var. *major*. 1. Section of leaf; 2. perianth segment, all natural size.

PLATE XIV.—**N. calathinus** (from specimen in Herb. Kew.). 1. Segments of the perianth; 2. section of leaf. (I am doubtful as to the correct shape of the leaf in section—*i.e.*, whether it is semi-cylindrical or quite flat. In both the figures in Redouté's "Liliaceæ" it is figured as flat. Haworth also describes them as flat, and if this is actually the case we have a character

which at once separates it from *N. triandrus*. If on the other hand the leaves are subcylindrical, it seems probable that *N. calathinus* and *N. triandrus* are merely forms of the same plant notwithstanding the separate geographical localities, and some slight difference in the length of the corona. Grenier and Godron in their "Flore de France," vol. iii. p. 261, describe the leaves of *N. calathinus* as follows:—"Feuilles vertes, faibles, souvent tortilles, lineaires, étroits, (4–5 millimètres de large) un peu en gouttière, portant en dessous deux nervures qui forment une carène avec un sillon."

PLATE XV.—N. triandrus (*pulchellus*, Hort.). 1. Section of flower; 2. flower; 3. section of leaf; 4. section of scape; 5. perianth segments. *N. triandrus* has been called "The Turning Jonquil" on account of its leaves and scapes being often tortile or twisted, and curiously enough *N. calathinus* is by Grenier and Godron, "Flore de France," vol. iii. p. 261 (as cited above), credited with the same peculiarity.

PLATE XVI.—A. N. (*montanus*) poculiformis. B. Another form sometimes known as *N. Galanthifolius* (Snowdrop-leaved Narcissus of gardens), but I have been unable to determine whether it is the *Tros galanthifolius* of Haworth's monograph, p. 5 (*Queltia Galanthifolia* of Herbert's "Amaryllidaceæ," p. 311), and which he says differs from the type in having a more expanded limb, the segments being more tortuous, and the cup more distinctly plaited. C. and D. represent two abnormal forms, in which some of the segments of the perianth are suppressed. 1–2. perianth segments; 3. section of leaf, all natural size.

PLATE XVII.—N. Macleaii. 1. Section of flower; 2. perianth segments; 3. section of leaf, all natural size.

PLATE XVIII.—A. N. incomparabilis. B. is a creamy white form known in gardens as "Single Phœnix" or "Phœnix-simplex." C. is a form with white perianth segments and a pale yellow cup, and is known as *N. incomparabilis*, var. *albus* in gardens. 1. Represents corona and flower-tube of *N. incomparabilis*, var. *semipartita*; 2. section of leaf, all natural size.

PLATE XIX.—N. incomparabilis. A. var. concolor (self-coloured). B. var. "Stella" (from a small flower). C. var. aurantius (orange-rimmed). 1. Perianth segments natural size.

PLATE XX.—N. incomparabilis. A—B. var. aurantius flore-pleno (Butter and Eggs). C. var. albus flore-pleno (Orange Phœnix of gardens, the flower bearing some resemblance to the conventional representations of the fire, from the embers of which the lengendary Phœnix is represented as rising in insurance and other illustrations).

PLATE XXI.—A—B—C. **N. incomparabilis plenus-sulphureus.** A finely formed double variety, known in some gardens as the "Lemon" or "Sulphur Phœnix."

PLATE XXII.—Hybrid Narcissi from the Royal Botanic Gardens, Dublin, and the Rev. H. J. Ellacombe's collection. A. A. a hybrid obtained by crossing *N. poeticus* with *N. Pseudo-Narcissus*, var. *minor*. (*N. exiguus* Salisb.) B. was obtained between *N. incomparabilis* and *N. Pseudo-Narcissus*, var. *minor*. The Rev. Mr. Herbert obtained some hybrid Narcissi closely resembling those to which we allude, and his plants are figured and described in the Botanical Register No. 38 (see page 12). In Paxton's "Flower Garden," vol. iii. plate 85, two or three hybrid forms of Narcissus are figured. *N. Leedsii* is simply a broad-lobed form of *N. incomparabilis* with a deep orange rim. *N. poculiformis*, var. *elegans*, is a distinct variety, the widely expanded creamy white perianth lobes being fully two inches in length, and the whole flower nearly five inches in diameter. The pale corona is three-fourths of an inch long, having a plaited orange tinted mouth which is doubtless owing to *N. incomparabilis* having been one of its parents.

PLATE XXIII.—**N. odorus.** 1. Section of flower enlarged; 2. perianth segment; 3. section of leaf natural size. (This plant is very variable in colour and size of flower.)

PLATE XXIV.—**N. odorus, var. heminalis.** 1. Section of flower enlarged; 2. ovary and style much magnified; 3. section of leaf; 4. perianth lobes natural size. (This is the deepest coloured variety of *N. odorus* in cultivation.)

PLATE XXV.—**N. odorus.** A. var. rugulosus. 1. Perianth lobe, natural size; 2. section of leaf, enlarged; 3. anther and style, natural size. B. var. **minor.** 1. Perianth lobe; 2. section of leaf, natural size.

PLATE XXVI.—**N. odorus flore-pleno.** (Queen Anne's double Jonquill.)

PLATE XXVII.—**N. juncifolius.** A. Common 2–3-flowered cultivated form. This is the "*Helena planicorona*" of Haworth's monograph. B. 1-flowered, short-leaved form in Herb. Kew. C. 4–5-flowered tall growing form in Herb. Kew. 1—2. Sections of flower to show the difference in the shape of the corona or cup; 3. perianth segments showing difference in form and size; 4. section of leaf, enlarged.

PLATE XXVIII.—**N. dubius.** 1. Single flower showing form in which the rim of the cup is nearly entire; 2. flower of *N. pumilus* (after Redouté, t. 409) showing form with lobed crown and thin grassy leaves; 3. large form having solitary flowered scapes; 4. section of scape; 5—6. fruit from

native specimens (after Moggridge); 7. section of flower; 8. perianth segments; 9. fruiting specimen from Herb. J. Gay at Kew, collected at Fort-rouge near Toulon. Reichenbach in "Icones Floræ Germanicæ," t. 812, figures this species with a yellow cup.

PLATE XXIX.—**N. Tazetta.** 1. Section of leaf; 2. perianth segments; 3. section of scape, all natural size.

PLATE XXX.—**N. Tazetta, var. orientalis.** 1. Perianth segments; 2. section of the flower scape.

PLATE XXXI.—Single flowers of **N. Tazetta** to show the diversity of form and colour into which this species varies. These are copied in part from Jordan and Fourreau's "Icones Floræ Europæ." The numerous forms of *N. Tazetta* are so extremely variable, that nothing short of fifty folio plates would do the plant justice. 1. **Hermione papyracea**, Jor. and Four. "Ic. Fl. Eur." t. clxxix. (from a 9-flowered scape); 2. **H. discolor**, ibid. t. clxxxiii. (from a 9-flowered scape); 3. **H. floribunda**, ibid. t. clxxxi. (from a 4-flowered scape). This is a very fine form and is similar to the "Grand Monarque" variety of the Dutch nurseries. Mr. J. Tyerman kindly sent me a splendid 11-flowered scape from Tregoney, Cornwall, and tells me that this and several other forms of *N. Tazetta* are naturalized in different parts of the county. It is worthy of remark that *N. Tazetta* flowers in the open air at St. Michael's Mount and other parts of Cornwall in January and February, or nearly at the same time as they bloom at Mentone, Cannes, and other parts of the Mediterranean region, and nearly three months before they open their flowers in the open air near London. 4. **H. virginea**, ibid. clxxvii. (from a 4-flowered scape). The cup of this variety is often irregularly dentate, or fringed around its margins. 5. **H. Ganymedoides**, ibid. t. clxxxii. (from a 4-flowered scape). This distinct and slender growing plant is the *Hermione Corcyensis* of Herbert (see Herb. "Am." pl. 37, f. 2), and is found wild in Corfu, whence Herbert received living plants. 6. **H. citrina**, ibid. t. clxxx. (from a 10-flowered scape); 7. **H. polyantha**, ibid. t. clxxviii. (scape 6-flowered); 8. **H. micrantha**, ibid. t. clxxvi. (from a 9-flowered scape); 9. **H. insolita**, ibid. t. clxxiv. (scape 4–5-flowered); 10. **H. Trewiana**, ibid. t. clxxxviii. (from a 4-flowered scape). This is a very showy plant, and is largely grown in the Dutch nurseries, whence it is imported and grown in our gardens under the name "Bazelman major." In form of flower this comes near the *N. orientalis* forms, figured in the earlier volumes of the "Botanical Magazine." 11. **H. chlorotica**, ibid. t. cxci. (scape 4-flowered as here shown); 12. **H. monspeliensis**, ibid. t. clxxxvi. (scape 2-flowered as shown). There is, however, another form with 5–7-flowered scapes, the flowers being slightly larger with broader segments. This plant resembles the *H. æquilimba* of Herbert's

"Amaryllidaceæ," pl. 41, f. 1; 13. **H. luteola**, ibid. t. cxcv. (from an 8-flowered scape); 14. **H. aurea**, ibid. t. cxciv. (scape 10–15-flowered). This is the finest of all the yellow-flowered section.

PLATE XXXII.—**N. Tazetta**, vars. continued. 1. **H. xanthea**, Jord. et Four. "Ic. Fl. Eur." t. cxciii. (scape 9–10-flowered); 2. **H. chlorotica** (bis) ibid. t. cxci. (from a 6–7-flowered scape); 3. **H. Bertonloni**, ibid. t. cxcii. (scape 6-flowered); 4. **H. crispicorona**, ibid. t. cxc. (scape 6–8-flowered). This plant also resembles the "Trewianus" and "Orientalis" forms, and is very showy as a garden plant. 5. **H. pratensis**, ibid. t. clxxxvii. (scape 4–5-flowered); 6. **H. mediterranea**, ibid. t. clxxxv. (scape 7-flowered); 7. **H. discolor**, ibid. t. clxxxiii. (from a 9-flowered scape); 8. **H. formosa**, ibid. t. clxxxix. (scape 5–6-flowered); 9. **H. æquilimba**, Herb. "Amary.," t. 48, f. 1 (scape 2–3-flowered). A native of Malta according to Herbert. 10. **H.** (*Schizanthes*) **orientalis**, Haw. This is a distinct and curious form of *N. Tazetta*, having the crown gashed or 3-lobed.

PLATE XXXIII.—A. **N. Tazetta**, var. **semiduplex**. This is a curious and distinct form, the extra multiplication of parts being entirely confined to the corona just as it is confined to the perianth segments in Herbert's *Ajax Eystettensis*. Some of the perianth segments are adherent with the reduced coronal segments as shown in figs. 1 and 2, and this causes them to remind us of the crest on the lip of various Odontoglots, Oncids, and other Orchids. B. **N. Bulbocodium**, var. **monophyllus**, from native Algerian specimens sent by post to Mr. Giles Munby in January, 1875. The bulbs were liberally divided by that gentlemen between the Rev. M. J. Berkeley and myself. The specimen from which my drawing was prepared was in bloom at the time I received it, and differs from the plant which flowered at Kew in 1870 in being more slender, and the flowers were only half the size. The flowers were perfectly sessile on the scapes, and are of snowy whiteness when they first open, but gradually acquire a creamy yellow tint with age. 1. Stamen and style; 2. perianth segments.

PLATE XXXIV.—**N. Tazetta flore-pleno**. This is one of the most showy double-flowered forms of *N. Tazetta*, but between the two I here figure there is a host of accidental forms in which the balance between the development of the coronal and perianth segments is disturbed more or less by cultural, climatical, or other causes,

PLATE XXXV.—**N. Tazetta**, var. **papyracea**. 1. Section of flower; 2. perianth segments; 3. section of leaf, all slightly enlarged. This is a very beautiful and common plant, its flowers being of snow-like or crystalline whiteness and very freely produced by imported bulbs. It is one of the most lovely of all the wild flowers in the vicinity of Mentone and other beauty spots on the shores of the azure Mediterranean.

PLATE XXXVI.—**N. Tazetta**, var. **Pannizzianus**. 1. Section of flower; 2. single flower removed; 3. perianth segments; 4. section of leaf, all slightly enlarged. This is undoubtedly a smaller flowered form of the last named plant.

PLATE XXXVII.—A. **N. gracilis**. 4. Perianth segments; 5. section of leaf, natural size. B. var. **tenuior**. 1. Paler coloured flower; 2. perianth segments; 3. section of leaf, all natural size. This is a smaller plant than the typical **N. gracilis** and bears lemon-yellow flowers, which change to nearly white with age, hence the common name "Silver Jonquil."

PLATE XXXVIII.—A. **N. intermedius**. 1. Perianth segments. B. var. **bifrons**, cultivated form of stouter habit, perianth segment; 2. section of scape; 3. section of leaf, all slightly enlarged.

PLATE XXXIX.—**N. pachybolbos** (in part after Durieu). 1. Section of flower; 2. perianth segments; 3. capsule; 4. single flower, slightly enlarged. This plant has been imported from Algeria by Mr. Giles Munby, in whose collection at Alice Holt, near Farnham, it flowered for the first time in this country in February, 1875.

PLATE XL.—A. **N. Jonquilla**. B. var. **minor**. C. var. **flore-pleno**. 1. Section of flower; 2. perianth segments; 3. section of leaf; 4. section of scape. 1 and 3 are slightly enlarged.

PLATE XLI.—**N. biflorus**. A. Wild, or naturalized form. B. From cultivated specimens. 1. Section of flower-tube and corona; 2. perianth segment; 3. section of leaf.

PLATE XLII.—**N. poeticus**. A. var. **recurvus**, Haw. (drooping-leaved saffron-rim). This is a late flowering form with weak recurved foliage. It is distinct only when seen growing. B. var. **tripodalis**, Salisb. MSS. **N. ornatus**, Haw. Mon. (early flat-crowned saffron-rim). C. var. **stellaris**, Haw. (long petalled saffron-rim). D. var. *aurantius*. *N. poeticus*, var. *Poetarum*, Haw. (saffron-cupped). *N. poeticus*, var. *grandiflorus*, Herb. This is an early flowering form (April), and is the largest and most conspicuous in the whole group. 1 and 2. Perianth segments, natural size, to show difference in form.

PLATE XLIII.—**N. poeticus**. A. A. var. **flore-pleno**. This, like all other double-flowered Narcissi, is very variable in different soils and climates. B. var. **verbanensis**, Herb. (smallest purple-rim).

PLATE XLIV.—**N. viridiflorus**. 1. Section of leaf; 2. perianth segments; 3. section of fistulous scape; 4. fruiting specimen, Herb. J. Gay, from near Gibraltar.

PLATE XLV.—**N. elegans**, from 1–2- and 4–5-flowered specimens in Herb., Kew. 1. Section of leaf; 2, 2. perianth segments; 3. *Hermione serotina*, tube, cup, and sepal. Sardinia, Herb. Benth. (after Herb. "Amary." t. 41, f. 29; 4. *Hermione serotina*. Outline from Desfontaines, verified by a Sardinian specimen (after Herb. ibid.). 5. *Hermione elegans*, Desf. "Flor. Atl." From a many-flowered umbel (after Herb. "Amary." t. 41, f. 27.

PLATE XLVI.—**N. serotinus**, from specimens in Herb. Kew. 1. Perianth segments; 2. section of leaf. This is evidently the same plant as is figured by Herbert "Amary." t. 42, 6, 6, as *Hermione Tangiers*, the plant is however represented there as flowering synchronously with the leaves, and the latter are represented as quite flat and not filiform and subterete as described by Mr. Baker.

PLATE XLVII.—**N. Broussonetii**. 1. Section of flower slightly enlarged; 2. tube, perianth segment and solitary stamen; 3. perianth segments, slightly enlarged; 4. section of leaf enlarged. (My figure is prepared from Dr. Leared's specimens in Herb. Kew., which arrived after Mr. Baker's description of the plant was written.)

PLATE XLVIII.—**N. canariensis**. 1. Section of flower; 2. perianth segments; 3. section of leaf. (From specimen in Herb. Kew.) In the dried specimen the flower-tube appears to be swollen immediately below the limb, and I suppose it is bulged out by the lower series of stamens, as the tube is excessively slender. It undoubtedly belongs to the "papyracea" section of the "Tazetta" group.

THE NARCISSUS.

HISTORY OF CULTIVATED DAFFODILS.

THE genus Narcissus forms a distinct and very natural group, belonging to the Narcissal Alliance of Lindley, and to the order Amaryllidaceæ. It is characterized by a perianth of six segments, within which is a more or less campanulate or bell-shaped corona or crown, and six stamens, the latter often biseriate, or in two sets, and in some cases they are adherent to the corolla tube nearly its entire length, but invariably become free at its mouth, and never adhere to the mouth of the crown as in Eucharis and other Amaryllids. In *N. Pseudo-Narcissus* and in *N. Bulbocodium*, the stamens are in one set, and spring from the base of the corolla tube. According to some authors, the generic name is derived from the classical story of the youth Narcissus, as related by Ovid and other ancient authors, while Pliny and others derive the word from *narce* (ναρκάω), on account of their narcotic perfume. In mythology these plants were consecrated to the Furies, who are said by the older writers to have employed the Narcissus to first stupefy those whom they wished to punish. Even writers of a comparatively modern date aver that the odour of these flowers produces madness, just as the flowers of the common scarlet field Poppy are now said by country people to induce faintness or headache. In support of the last-named derivation instances are on record in our own day where the odour of *N. Tazetta* and *N. poeticus*, in close rooms, has proved extremely disagreeable, if not actually injurious to delicate persons, many of whom are extremely sensitive to the effects of perfumes. All the parts of the plant are narcotic and highly poisonous.

The popular names Daffodil, Daffadilly, and Daffadowndilly, are in all probability corruptions of the word Asphodel or Asphodelus; the old name "Lent Lilies" had reference to the time at which

most of them flower, while the name "Chalice flowers" which the older botanists and gardeners used to distinguish the *incomparabilis* and *odorus* or "*Queltia*" forms, had reference to the obconical form of the corona, which nearly resembles in shape the cup or chalice used for holding the sacramental wine.

In Bentham's "Handbook of the British Flora," the common or English name of *N. Pseudo-Narcissus* is written Daffodil or Daffy-down-dilly, and at p. 519, under "Narcissus," are the following remarks, which I quote here, as they show that Mr. J. G. Baker is not alone in considering the species to be of a much more limited extent than is by many supposed:—

"A well-defined and very natural genus, chiefly South European, not extending into Asia beyond the Caucasus, and probably containing but few real species, although some botanists, availing themselves of the most trifling characters, observed chiefly in cultivated varieties, have proposed the breaking it up into fifteen or more genera, with above a hundred supposed species."

Mr. Peter Barr, an enthusiastic cultivator, who possesses perhaps the most complete collection of species and varieties in Europe, thus alludes to the early history of these beautiful flowers:—

"The Narcissus is amongst the oldest and most beautiful of Spring flowering bulbous plants. It has for centuries been one of the highly-prized garden favourites, and has commanded in an unusual degree the attention of the scientific botanist. During epochs when artificial gardening has been in the ascendant, Narcissus, like many other charming flowers, has had to yield to the inexorable goddess of Fashion. At such times it has been saved from extinction by the fostering care of our Botanic Gardens, and of those enthusiastic amateurs who love flowers not for what they cost, but for their intrinsic beauty, and who, while they do not ignore new introductions, discard not their old friends, unless the new is an improvement upon the old. The Narcissus, however, like many another neglected flower, is now reasserting its position, and claiming its proper place in the general economy of border decoration, and as a cut flower for furnishing vases."

Three of the species, namely, *N. poeticus*, *N. biflorus*, and *N. Pseudo-Narcissus*, are mentioned in "Hortus Kewensis" (vol. ii. pp. 214, 215) as being natives of England, while Bentham

and other modern writers on our native wildings only include *N. Pseudo-Narcissus* as a genuine British plant, and the last-named species, if not a native, is abundantly naturalized in many localities, and the true double variety is still found in the Isle of Wight, as alluded to by Parkinson in his "Paradisis Terrestris" (1629), pp. 103–4.

Phillips, writing in 1824, alludes to this subject in his "Flora Historica," p. 104. Speaking of *N. poeticus* he observes :—"This Narcissus seldom produces seed in England, even by the assistance of cultivation (?), and we are therefore of opinion that the few plants which have been found at Shorne, between Gravesend and Rochester, as well as those discovered in Norfolk, are the offsets from imported plants, probably of as early a date as the time of the Romans, who we may naturally conclude would not fail to plant the flower of their favourite poet, when we discover that they paved the floors of their dwellings with tessellæ that represented his tales."

Lobel alludes to the culture of Narcissus as far back as 1570; and later still, Gerard (1596) describes and figures several kinds that were popular in the time of Elizabeth. Among others described by the last named author is the double-flowered variety of *N. Polyanthus*, bulbs of which, he quaintly tells us, were sent from Constantinople "to the Right Hon. the Lord Treasurer, among other bulbed flowers." Another quaint old herbalist, John Parkinson (1629), in his excellent old folio, "Paradisis Terrestris; or Garden of Pleasant Flowers," before alluded to, devotes no less than forty pages to woodcuts and quaint descriptions of nearly a hundred varieties of this popular flower. Parkinson figures nearly all the kinds now in cultivation, most of the engravings being really excellent productions of the time, and this work deserves to be in the library of every amateur interested in hardy flowers, as it gives a most excellent view of the hardy plants grown in gardens two or three centuries ago.

"Herbert, two centuries later, in his 'Amaryllidaceæ,' enters very fully into the nomenclature of the Narcissus, making free use of his contemporaries, Salisbury, Haworth, and Ellacombe, who were all deeply versed in the different forms and varieties of the Narcissus; and from authors such as Parkinson, Miller, Linnæus, Sweet, Clusius, and from the various Herbariums, he drew largely in dealing with this fine family of bulbous plants."

In 1869, Mr. J. G. Baker, of the Royal Herbarium at Kew, modified the classification of the various writers on the Narcissi, his arrangement or review being one of the most useful and valuable contributions to garden literature of late years.

Most of the species are European, and have been introduced and grown in our gardens since about A.D. 1500, according to the old Herbals, but it is probable, as suggested by Phillips, that the commonest species were introduced long before. Some, as *N. elegans*, *N. viridiflorus*, and *N. serotinus*, which bloom in the autumn, are lost to cultivators in this country for the present, although they have been repeatedly introduced to our gardens.

POETRY OF THE NARCISSUS.

"Daffodils
That come before the swallow dares, and take
The winds of March with beauty."

SHAKSPEARE.

There are but few hardy flowers grown in gardens, if we except the Lily and the Rose, that have received more fanciful tributes from classical poets of all ages than the graceful flower alluded to by Spenser as the

"Foolish Narcisse that likes the watery shore."

Nearly all writers agree in making it the emblem of self-love, from the gracefully told and oft-repeated story in Ovid's Metamorphoses, where the coy Narcissus, a son of Cephissus and the fair Liriope, is made to slight the gentle nymph Echo in favour of his own reflection in the limpid pool, and is by Nemesis turned into the flower that bears his name. We will, however, let the poet tell his own tale—

"Narcissus on the grassy verdure lies;
But whilst within the crystal font he tries
To quench his thirst, he feels new thirst arise;
For as his own bright image he survey'd,
He fell in love with the fantastic shade,
And o'er the fair resemblance hung unmov'd,
Nor knew, fond youth! it was himself he lov'd."

The concluding lines of this poem are so beautiful, even in their English garb, as told by Addison, that we here introduce them as being sure to interest all cultivators of this classical flower.

We read that the fair nymph, Echo,

"Saw him in his present misery,
Whom spite of all her wrongs she griev'd to see,
She answer'd sadly to the lover's moan,
Sigh'd back his sighs, and groaned to ev'ry groan.
'Ah! youth! belov'd in vain!' Narcissus cries;
'Ah! youth! belov'd in vain!' the nymph replies.
'Farewell!' says he. The parting sound scarce fell
From his faint lips, but she reply'd 'Farewell!'
Then on the wholesome earth he gasping lies,
Till death shuts up those self-admiring eyes.
To the cold shades his flitting ghost retires,
And in the Stygian waves itself admires."

"For him the Naiads and Dryads mourn,
Whom the sad Echo answers in her turn,
And now the Sister Nymphs prepare his urn;
When looking for his corpse, they only found
A rising stalk with yellow blossoms crown'd."

Old Herrick's pleasing allusion to Daffodils deserves mention here, as the production of one of the most faithful, quaint, and simple of all our poets, especially as it possesses "a moral pathos of the most touching kind."

"Fair Daffodils! we weep to see
You haste away so soon:
As yet the early-rising sun
Has not attain'd his noon:
Stay, stay,
Until the hastening day
Has run
But to the even-song;
And having pray'd together, we
Will go with you along.

"We have short time to stay as you;
We have as short a spring,
As quick a growth to meet decay,
As you, or anything:

We die
As your hours do; and dry
Away
Like to the Summer's rain,
Or the pearls of morning dew,
Ne'er to be found again."

Thomson, the poet of the "Seasons," alludes to this flower as the—

"Narcissus fair,
As o'er the fabled fountain hanging still."

And he also speaks of

"Jonquils
Of potent fragrance."

While Milton has the following beautiful allusion to them as Daffodillies, a name by which the commoner forms are still known—

"Bid Amaranthus all his beauty shed,
And Daffodillies fill their cups with tears,
To strew the laureat hearse where Lycid lies."

Spenser also alludes to them as Daffadillies—

"Thy sommer proude with Daffadillies dight."

While in another instance he says—

"Strew the green round with Daffodowndillies."

The quaint old herbalist, Master Gerard, who was a contemporary of Spenser, also speaks of them as Daffadowndillies, Chalice Flowers, and Lent Lilies, being other common names for them in the literature of the period.

This was one of the flowers which the daughter of Ceres was gathering when seized by Pluto; and our own poet alludes to the story in the "Winter's Tale."

"O Proserpina!
For the flowers now that frightened thou let'st fall
From Dis's waggon! Daffodils."

It has been observed that these beautiful flowers are never seen to better advantage than when planted on the moist margins of

lakes and streams or islands, where their golden nodding flowers contrast with the cærulean reflection in the limpid water below. This seems also to have occurred to Keats, who, in one of his beautiful poems, asks—

"What first inspired a bard of old to sing
Narcissus pining o'er the untainted spring?
In some delicious ramble he had found
A little space, with boughs all woven round;
And in the midst of all a clearer pool
Than e'er reflected in its pleasant cool
The blue sky, here and there serenely peeping
Through tendril wreaths fantastically creeping.
And on the bank a lonely flower he spied,
A meek and forlorn flower with nought of pride,
Drooping its beauty o'er the watery clearness,
To woo its own sad image into nearness;
Deaf to light Zephyrus it would not move,
But still would seem to droop, to pine, to love.
So while the Poet stood in this sweet spot,
Some fainter gleamings o'er his fancy shot;
Nor was it long ere he had told his tale
Of young Narcissus and sad Echo's bale."

Shelley speaks of Daffodils in his own quiet, simple manner; and like many other of our own poets, he associates them with water scenery.

"Then the beautiful wild plants and the Tulip tall,
And Narcissi, the fairest among them all,
Who gaze on their eyes in the stream's recess,
Till they die of their own dear loveliness."

Of all those, however, who employ beautiful language to teach us how to love beautiful things, we must not fail to speak of Wordsworth, whose graceful tribute to the Narcissus would alone make us love the flower, even were it less beautiful of itself than is really the case.

"I wander'd lonely as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host of golden Daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the Milky Way,
They stretch'd in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.

The waves beside them danced, but they
Outdid the sparkling waves in glee—
A poet could not but be gay
In such a jocund company:
I gazed—and gazed—but little thought
What wealth the show to me had brought.

For oft when on my couch I lie,
In vacant or in pensive mood,
They flash upon the inward eye,
Which is the bliss of solitude,
And then my heart with pleasure fills,
And dances with the Daffodils."

We might quote from Virgil and other authors who have alluded to these beautiful flowers, were the passages above cited insufficient to illustrate the prominent position they occupy in classical literature.

We learn to love flowers nearly as much for the memories and associations they call to mind, as for their delicate beauty and grateful fragrance; and doubtless the classical interest of this flower has done much towards giving this genus the high position it has held in gardens and in garden literature from the earliest period to the present time.

PROPAGATION.

Like most other hardy bulbous plants, Narcissi are for the most part multiplied by dividing large established clumps; a simple operation, best performed in the autumn, when the more tender species are raised from the beds or borders for storing away, or for distribution among friendly cultivators. It is possible, however, to obtain seedlings, a fact well-known to Gerard, Parkinson, and Miller; and the last-named cultivator gives a very full account of the management of seedlings, as then practised, in his admirable

"Gardeners' Dictionary," published in 1724. Among the more recent cultivators and hybridizers of this charming hardy flower I may mention Mr. Edward Leeds, of Longford Bridge, Manchester, who has succeeded in raising many fine and variable forms of the *N. incomparabilis* section. The Rev. Mr. Ellacombe, of Bitton, has also obtained seedling varieties similar in type to the above, but with smaller flowers. I mention this here, because some of the seedlings are so nearly like *N. poculiformis* that I am inclined to think it is but a white flowered form of the first named plant. These seedlings vary from white through all shades of creamy and lemon yellow to a deep golden yellow nearly as bright as in *N. odorus*. The comparative readiness with which Narcissi may be induced to perfect seed under good cultivation leads one to suppose that the very distinct and beautiful forms of *N. Pseudo-Narcissus* and of other species have been naturally or accidentally originated in this manner, just as the production of double-flowered forms and monstrosities has been favoured by good cultivation.

If the grower desires to obtain seedlings, it will be of infinite service, and greatly conduce to success, if the flowers are fertilized with the pollen of a flower distinct from that operated on, and if from a distinct plant so much the better, for experience proves that flowers fertilized with their own pollen often prove abortive or sterile, while when fertilized with that from another plant, they are exactly the reverse. We are indebted to Darwin* for many original and valuable observations and illustrations on this subject; and the reader interested in hybridizing cannot do better than study them in their entirety.

If the production of a hybrid or seedling intermediate between two species is desired, the pollen is simply removed from the anthers of one to the stigma of the other, using for the purpose a small camel's-hair pencil, slightly moistened in either water or honey. It may be observed that there is a tendency to confuse species by raising hybrid forms; but in this we only imitate Dame Nature, who has slowly, but none the less surely, carried on a system of selection, inter-crossing, and variation from seed, soils, or habitat, for ages, hence the great variety of ornamental garden plants that now grace our tasteful homes.

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* "Animals and Plants under Domestication," and "Origin of Species."

While speaking of fertilization, it may be as well to draw attention to the following extract from the *Gardeners' Chronicle* for 1870, p. 665, which not only shows the fallacy of employing the length of the style as a specific character, but also goes some distance towards accounting for the biseriate stamens and the cup:—

"We are far from thinking that these varied arrangements of the stamens are simply for the convenience of 'classifiers.' What they do mean may in some degree be gleaned from the following facts. Where the stamens are in one row and of equal length, the anthers open before the stigma is fully developed, and this latter when full grown protrudes far beyond and out of the way of the stamens: inference, it is not fertilized by the pollen formed by its associate stamens but by others in other flowers. Where the stamens are in two rows, and the upper row protrudes from the mouth of the flower-tube, there it will be seen that the upper anthers open at the time when the stigma is fully developed, and that the latter, which is on a level with them, is often dusted over with pollen from the immediately adjacent anthers: inference, stigma fertilized by the pollen from its associate stamens. But what of the three lower ones? These are still undeveloped when the upper ones are ripe. We can only guess that their use is to supply pollen for other flowers when that occasional cross which Darwin recognises as so essential takes place. As to the 'cup,' it is neither calyx nor corolla, nor stamens, but an outgrowth from the perianth, formed subsequently to the stamens, and is in all probability referrible to an abortive series of stamens. The use of the cup seems to be to guide the insects in their visits to the flower—visits so important to the well-being of the insect and of the flower itself, or at least of its descendants."

September is the best time for sowing seed, in order to obtain new varieties. For the mode of proceeding we cannot do better than quote the words of one of the most successful amateur cultivators of the Narcissus. Mr. Leeds says:—"To obtain good varieties, it is needful, the previous season, to plant the roots of some of each kind in pots, and to bring them into the greenhouse in spring to flower, so as to obtain pollen of the late-flowering kinds to cross with those which otherwise would have passed away before these were in bloom.*

* Pollen may be kept for several weeks if carefully removed from the anthers during dry sunny weather, and enclosed either in clean tin foil or hermetically sealed glass tubes. By adopting this simple method of preserving pollen, that from early flowering species can be made available for fertilizing the later flowered kinds.—F. W. B.

With me the plants always seed best in the open ground. When the seed-vessels begin to swell, the flower-stems should be carefully tied up, and watched until the seeds turn black. I do not wait until the seed-vessels burst, as many seeds in that case fall to the ground, and are lost, but take them off when mature, with a portion of the stem, which I insert in the earth in a seed-pot, or pan, provided for their reception. I place them in a north aspect, and the seeds, in due season, are shed, as it were, naturally, into the pot of earth. I allow the seeds to harden for a month on the surface before covering them half an inch deep with sandy soil. The soil should be two-thirds pure loam and one-third sharp sand; the drainage composed of rough turfy soil. In October I plunge the seed-pots in a cold frame facing the south, and the young plants begin to appear in December and throughout the winter, according to their kinds and the mildness of the weather. It is needful, in their earliest stage, to look well after slugs and snails."

Seed from the more hardy species may be sown as soon as ripe, in a bed of light sandy loam and leaf-mould, and if the bed is elevated a few inches above the general level of the ground, and protected by a cold frame, so much the better, as the young plants will not be so liable to suffer from damp or stagnant moisture. The seeds generally come up freely about March, and flower the third or fourth year if liberally treated. If after the flowers expand the seedlings are found to be sufficiently characteristic to merit a distinctive title as a variety, the popular name adopted should be published in the horticultural journals, and the names of the parents given in full, together with any other interesting details likely to interest either the botanist or horticulturist. Inattention to this simple rule often causes great confusion in the nomenclature of cultivated or garden plants, and it is the duty of every one interested in gardening to prevent mistakes of this kind as far as possible.

The production of seedling varieties is a pleasing operation, and one cannot help thinking that a thoroughly comprehensive series of experiments in the hybridization of this genus would, if carefully recorded, do much towards clearing up the doubts which now exist with regard to many of the supposed species. The enormous wealth of exotic vegetation now introduced to our gardens, renders it impossible for one mind to digest it thoroughly; and, I venture to urge, the idea of amateur cultivators taking up a distinct group and devoting themselves to their culture, history, and structural minutiæ,

feeling sure that this course would lead to many important results, from a botanical as well as from a gardening point of view. Physiological botany is almost unknown among us, and there are many other interesting points connected with living vegetables that can never be satisfactorily cleared up, except it be worked out in the garden.

In the August number of the *Botanical Register* for 1843, No. 38, several curious Hybrids are figured, which were raised by the Honourable and Very Reverend Dean Herbert, "from seed, at Spofforth, and are amongst those which have already flowered." It is there stated by Mr. Herbert that many Narcissi which have been distinguished as species, and even made into fresh genera, are never known to bear seed, and they are hence regarded as mules. Mr. Herbert has entirely verified this supposition in some of his hybrids, producing what have been regarded as separate species or genera from two other decided species; fig. 5 (see *Bot. Reg.*, cited above), he says, is the produce of the wild Yorkshire Daffodil (*Pseudo-Narcissus*) by pollen of *N. poeticus*, and is decidedly a variety of the plant called *N. incomparabilis;* fig. 3 is the produce of *N. incomparabilis* by the same *N. poeticus* that is, two generations from the Daffodil by the poetic Narcissus, and in it the change is complete from the form of the stamina in the Daffodil to that in the true Narcissus, and it is evident that one cross more (or at least two further crosses) would out of the wild Daffodil produce the true Pheasant's-eye Narcissus. Other very curious instances are brought forward, and Mr. Herbert says, "It is desirable to call the attention of the humblest cultivators—of every labourer, indeed, or operative who has a spot of garden or a ledge in his window—to the infinite variety of Narcissi that may be thus raised, and most easily in pots, at his window, if not too much exposed to sun and wind, offering him a source of harmless and interesting amusement, and perhaps a little profit and celebrity. The six anthers should be carefully taken out before the flower which is to bear the seed blooms. This may be done through a slit in the tube; and the yellow dust from another sort must be applied to the point of the style" (*Paxt. Mag. Bot.*, vol. x. p. 187).

In the *Gardeners' Chronicle* for June 10th, 1865, the late Mr. W. Backhouse, of St. John's, Walsingham, makes the following pertinent remarks on hybrid Narcissus:—

"The Daffodils *Narcissus major*, *Pseudo-Narcissus minor* and *moschatus*, cross with one another, and the produce seeds as freely as the parents. The colours are not merely intermediate, but of all shades between the colours of the parents, where these differ, as in *moschatus*. *N. bicolor* seeds badly and is deficient in pollen, but from crosses of the other Daffodils with it I have raised some of the largest and finest of the class. These also seed badly, and their produce has a tendency to revert to the Daffodil. The roots of *N. bicolor* are very large, and shaped somewhat differently from the others, and the crosses from it have the same peculiarity; the colours of the seedlings vary from those of their parents through white with lemon cups to almost pure white. From the Daffodils crossed by *N. angustifolius* (*N. poeticus*) the kinds called *fœtidus* by Dean Herbert are produced, and the cross is intermediate between the parents when *N. major* and *N. Pseudo-Narcissus* are used, but with *N. poeticus* the variety is greater, and some with very finely expanded cups occur. The variety also seems to be greater when some of the seedling varieties of the Daffodil are used. These crosses seed very sparingly, but may occasionally be got to produce seed by a cross with either parent; those with the Daffodil having shorter cups than *N. major* and *moschatus*, and those with *N. poeticus* or *angustifolius* being intermediate, with generally a red edge to the cup. Seeds I have sown from plants not artificially impregnated produce the same result, some showing the Daffodil and others the *N. angustifolius* type. The orange tints on some of these crosses vary in different seasons. On many the cup will one year be orange-tinted and the next plain yellow.

"The Daffodils crossed by *N. Tazetta* produce plants intermediate between the two in general, but sometimes the cup is not longer than in *N. Tazetta;* the flowers on each stalk vary—two, four, and up to six occurring. These crosses vary in colour and size according to the nature of the parent *Tazetta;* but the produce does not seed, except that last year one pod producing one seed occurred from perhaps a couple of hundred flowers. A warmer climate than mine might produce different results. No pollen is to be got from it to cross with the Daffodil parent.

"The percentage of seedlings showing striking peculiarities is but small from any of these crosses; and the colours only partially follow what might be expected from the parents; the cross from

N. moschatus by *angustifolius* not being always white; and I have from *fœtidus* by *angustifolius* some with green flowers.

"Before dusting with the pollen I cut out the stamens, except in the kinds which only seed when crossed; but in out-of-door plants, when there are numerous others about of the same genus, there is no certainty but that sometimes the bees may be the authors of a different cross. I have sometimes tied the mouth of the cup in Daffodils for a time to prevent access, but in most cases the result shows the intended cross to have taken place."

Referring to the above, the Editor remarks:—

"Such records as these, and those of Mr. Herbert in the *Botanical Register*, and Mr. Leeds, of Manchester, in the *Gardeners' Magazine of Botany*, lead irresistibly to the conclusion that among the Narcissi at least many of the plants received as species are mere varieties or hybrid forms." "There is no end," writes Mr. Leeds, "to the varieties and elegant forms that may be obtained." And he adds:— . . . . I think the number of species is very small."

The latter view has been adopted by Mr. Baker who, in his "Review," as I think, very wisely excludes nearly all previously supposed species that have not been identified as such from wild or native specimens. Even the latter method of procedure is less certain than is apparent at first sight, for the wild species, where they grow naturally in close proximity to each other, are cross-fertilized by insects, and their seedlings are nearly all more or less intermediate in character. A change of soil or habitat again has in many cases a marked effect on the habit of the plant and the colour of its flowers, hence great caution is necessary in dealing with a group like that now under consideration. Yet some of the continental botanists have made twenty or thirty species of the different forms of *N. Tazetta* alone.

CULTURE.

The culture of all the Narcissi is so very simple that one can only wonder they are not more frequently found in modern gardens, both public and private, than is at present the case. They are included among the small number of hardy bulbs that are sufficiently robust and prolific to become naturalized in this country in con-

siderable abundance. The common *N. Pseudo-Narcissus* abounds plentifully in the old gardens, orchards, and hedgerows in some parts of the Western and Midland counties (in common with the pearl-like Snowdrop and our native vernal Crocus), indeed it is so plentiful in some districts that more than one writer on our British plants includes it as a native wilding, although from their being generally found near the sites of old, or existing habitations, it is perhaps best considered as having escaped from gardens. The more hardy kinds as all the varieties of the last-named species, *N. incomparabilis*, and *N. poeticus*, readily adapt themselves to almost any soil or situation, although they succeed best in a moist, rich sandy loam, or good deep garden soil. The bulbs may be planted either in clumps, or rows three to four inches deep, and in the case of the hardier species this operation is best performed in the autumn, as soon as the foliage has become fully developed. Some of the tender kinds and the varieties of *N. Bulbocodium* may be taken up in the autumn and stored in moist sand in a cool airy cellar until the spring, when they may be planted out where they are to bloom, or grown in pots in a cold frame with an eastern aspect. Many of the hardier species form charming plants either for window or conservatory decoration when cultivated in pots. Bulbs of the numerous beautiful varieties of *N. Tazetta* are imported from Holland and Italy every autumn, and are much grown as greenhouse ornaments, as they stand forcing equally well with the Hyacinth, and come in extremely handy for cutting and indoor decorations. It was formerly a common practice to grow Narcissi in glasses of water, and imported bulbs succeed well under this *régime*, although the system is now seldom adopted.

The Double Roman Narcissus, planted early in September, blooms indoors before Christmas, while the Paper-white (*N. papyraceus*), combined with the other varieties for indoor culture, if planted in succession from September to December, maintain a rich floral display till the end of April. The bulbs of imported Narcissi being large, a 5-inch pot will be needed for one bulb, and a 6-inch pot for three; while a group of six in an 8-inch pot will produce an exceedingly beautiful effect.

Loudon, in his Encyl. Plts., p. 241, says of Narcissus :—"Their forcing may be greatly accelerated by retarding the bulbs one season in an ice-house," but this plan is very rarely adopted by

modern cultivators, who succeed in blooming solid, well-ripened bulbs in a few weeks after they arrive in this country, which generally happens in August, or the beginning of September. After potting, the plants should be placed under a north wall, or in a cold frame, and covered with a layer of sand or coal ashes to a depth of six inches. So treated, they soon root well and bloom directly they are removed into a genial temperature.

It does not appear to be sufficiently well known that the flower spikes of Narcissi, if cut from the plants as soon as the buds attain their full size, will open their flowers in water just as well as if left to expand on the plants themselves. Cut spikes often continue to open their flowers for fully a fortnight after being cut from the plants, and flowers of *N. gracilis* have remained fresh for three weeks in my sitting-room, arranged in a vase of living sphagnum Moss and fresh green Selaginella. Most of the species last in bloom for a month or six weeks in the open air, the first to expand their flowers being *N. Pseudo-Narcissus* and its varieties, followed by *N. incomparabilis, N. Macleaii, N. gracilis, N. triandrus, N. Tazetta, N. poeticus,* and its beautiful double-flowered form which opens its sweetly-scented Gardenia-like flowers about the latter end of May or beginning of June. The autumnal blooming species appear to be lost to cultivators. The season of flowering will be found to vary considerably according to the time the bulbs are planted.

As early-blooming spring flowers they are very valuable, and may be made very effective embellishments to the garden by planting them in clumps, or irregular masses on the margins of shrubbery borders, or on such outlying portions of the lawn and pleasure grounds as are not mown until late in the season.

In the *Gardeners' Magazine* for 1874, p. 600, the following excellent plan of culture is recommended, and its adoption is especially to be advocated in town or suburban gardens where space is limited :—

"Narcissi, when grown in beds and open borders, should be left undisturbed for several years in succession to insure the formation of large clumps and abundance of handsome flowers. The best for large clumps or Daffodil beds are the *Pseudo-Narcissus, Telamonius, incomparabilis,* and *odorus* (or Philogyne) sections. A superb display might be made by judiciously clumping them in a series of beds, with edgings of *Corbularias, minor, nanus,* and other of the

dwarfest sections. When satisfactorily arranged, they should be left alone for several years, and, of course, the question will arise, What is to be done to make the beds gay in the latter portion of the summer? Now, there can be nothing easier than to make as good a display as can be desired without touching a single root of the Daffodils. To prepare the way, let there be spread over the beds in winter a good coat of rather fat rotten manure, which must be broken and made workmanlike by the rake. In due time the Narcissi will cover the bed with their leaves and flowers, and weeds must, of course, be kept well in check. At the proper time—say, late in March or early in April—sow hardy annuals between the Daffodils, or a little later plant out tender annuals, and thus insure a display to follow in the later days of summer, and, indeed, until the autumnal frosts make an end of outdoor flowers. When this system is practised, the bed should have a coat of manure every year, to enable it to give the two or three crops of flowers required."

On the margins of streams, islands, or lakes Narcissi are peculiarly attractive, and generally succeed well in such cool moist situations. In order to preserve them in beauty as long as possible, they should also be planted in sheltered nooks and corners, exposed to the east, but shaded from the hot midday sun and rough winds, both of which are fatal, causing the flowers to shrivel and fade in a few hours. If grown in quantity, they may be made extremely effective in spring bedding arrangements, or by the margins of sheltered woodland walks and drives, by massing them along with Primroses, rosy and blue flowered Hepaticas, crimson Daisies, rich blue Squills, and a host of other beautiful hardy flowers which are now happily rising in popular favour.

The double forms of Narcissus are apt to become modified by culture, rich soils tending to induce an increased multiplication of parts, while, on the other hand, they gradually become less double, or even revert to the single type, when starved in large unmulched clumps or masses. Good culture and richly manured soils have also a great influence on the number of flowers borne on a single scape. The Common Jonquil, for example, often bears eight or ten flowers when liberally grown, but this number soon decreases down to one or two puny flowers when the plant has exhausted the soil in which it is grown. *N. poeticus*, again, often produces greenish, deformed

flowers when starved in poor soils, or, to use an expression common among gardeners, the flowers "go blind."

The following account of a "Daffodil garden" by Mr. D. T. Fish, is reproduced from p. 455, vol. i. of *The Garden*, by the kind permission of the Editor, and serves to give some idea of the grand effect produced by the common double Narcissus alone:—"I have only seen two gardens of this kind that seemed in any way perfect, and they contained no variety, only masses of the great Yellow Daffodil. Talk of 'apples of gold in baskets of silver,' doubtless they are very beautiful; but the green and gold of Daffodils is even richer and more satisfying, and they rest not day nor night. The merest zephyr stirs leaf and flower like the gentle ripple of the sea. There stands a pretty dairy at the end of a long walk which connects it with a ducal kitchen garden. The walk shoots straight as an arrow to its mark, through tall overhanging trees, and hits the dairy in the doorway. What is that great globe of green and gold in front of the entrance? Seen from under the shade of the wood it looks like a bright cloud or an enormous golden balloon. Why, that is a bed or garden of Daffodils glowing brightly through the keen pure air of March!

"There is a second Daffodil garden across a green lawn, away through glossy Hollies, past the walls of green yews, past masses of Rhododendrons lying on the turf which they have largely overrun, under silvery Larches, along a walk running round veritable lines of beauty, slipping down valleys, and climbing tiny banks, there lies a Daffodil garden retreating from the eye until its outer boundary is lost amid the green skirts of the overhanging shrubs. It is large, irregular, and natural. The bulbs are planted in large masses in the turf, and the interstices are filled up with common Primroses. The leaves and flowers spring forth amid the tender grass, furnishing a niche in the wood far from other flowers, and the surprise and delight which they afford are unbounded. Such groups in gardens of one common plant illustrate in an extraordinary manner the cumulative effect of mere numbers. One, a dozen, a score, a hundred Daffodils may be seen and admired and almost immediately forgotten; but a waving sea of Daffodils—never. While thus writing of the beauty of the common sort, I must not be understood as disparaging other varieties. One the contrary, I should like to see niches in pleasure grounds, shrubberies, and woods furnished

with them all on a scale of equal width and grandeur. Then, indeed, would our Daffodil gardens become the sweetest and best of features about a place."

DISEASES AND INSECTS.

Fortunately the Narcissus is, in most cases, sufficiently vigorous in constitution to ward off those agents of decay which are common to plants of a more delicate character, and it is probable that their poisonous qualities protect them from the ravages of many insects, just as they escape being eaten by cattle from the same cause. Some of the tender kinds are apt to rot during wet seasons unless protected as recommended under the head of culture. The bulbs should not be stored in dry boxes or shelves if taken up in autumn, but laid on a cool cellar or shed floor. If kept in a very dry or heated structure, they, in common with all bulbs and tubers, are considerably weakened by evaporation. Mice, which are so fond of crocus corms, never attack Narcissus bulbs so far as I am aware.

The Narcissus Fly (*Criarhina Narcissi*) does most damage during hot and dry seasons.

In *Paxt. Mag. Bot.*, vol. xiv. p. 168, the grub is described as dull yellowish white, about one-fourth of an inch in length, with a brownish head. About October it becomes full grown, and goes into the pupa state in the ground, and the perfect fly appears the following March. The grubs feed upon the bulbs, and cause them to decay.

In the *Gardeners' Chronicle*, vol. ii. pp. 203-4, is an exhaustive account of this pest under the name of *Merodon Narcissi*, which appears to be a variable insect, as four species have been described, all referable, however, to this one. "In the month of November one or two large roundish holes (fig. 1. a, b) are sometimes found in the outsides of the bulbs of these flowers which are more or less decayed within, where a maggot will generally be found, which, by feeding on the heart during the summer and autumn months, has been the sole author of the mischief." "Towards the end of November the maggot is transformed into a pupa, to accomplish which it eats its way out of the bulb near the roots (fig. 1, b) and buries itself in the surrounding earth. . . . . In this state they remain until the following spring, when the flies issue from their tombs; their eggs

are then deposited, but upon what part of the plant they are laid has not been observed, probably upon the bulb near the base of the

leaves. April appears to be the month when most of the flies hatch, and they have been compared to small humble bees, from the disposition of their colours, which are for the most part yellow, orange, and black, but they certainly bear a great resemblance to some of the bots; from bees they are readily distinguished by having only two wings; the horns and proboscis are totally different, and they have no sting. Fortunately it is not very common in this country, but we are told as above that, "At Berlin a considerable number of Italian bulbs are affected by these maggots, and they are readily detected by their not throwing up leaves; when therefore a bulb fails to vegetate, it ought to be immediately dug up and destroyed." I have often met with the grub of this insect in imported bulbs of the "Paper White" and the "Double Roman" Narcissus, and doubtless many imported bulbs are what cultivators term "blind" from this cause. The accompanying illustration (from the *Gard. Chron.*) shows both the perfect insect and the grubs together with the damage caused to the bulb.

In poor, dry soils (says Haworth, Sw. Br. Fl. Gard.), or in very dry seasons, the flowers of *N. poeticus* are often imprisoned in the spathe and wither away, or go blind, when only about half grown, while the unopened spathe becomes swollen, apparently by the gas generated by the decaying flower bud. The swollen spathe may be burst open by pressing it between the fingers, when the bud appears as if it had been scorched or scalded by the sun.

SPECIES AND VARIETIES OF NARCISSUS.

GROUP I. MAGNICORONATÆ. *Large-crowned Daffodils.*—Crown as long, or rather longer than the divisions of the perianth.—J. G. B.

1. N. Bulbocodium.
2. N. Pseudo-Narcissus.
3. N. calathinus.

1. NARCISSUS BULBOCODIUM, *Linn.* (*Hooped Petticoat Narcissus; or, Medusa's Trumpet Daffodil*).—This is one of the most beautiful of all the species, and although it varies much in size and colour, is a very distinct and easily recognised plant. The largest form is *N.* (*Corbularia*) *serotinus* of Sweet, who figures it in his "Flower Garden," t. 164, as the "Late-flowering Hoop Petticoat." This bears large golden flowers on scapes six to twelve inches high, the deep green leaves being curiously twisted or contorted, often fifteen or eighteen inches in length, and more or less prostrate on the surface of the soil or pots in which it is grown.

The common form of *N. Bulbocodium* cultivated in gardens has leaves and scapes varying from four to eight inches in length; the flowers being of a rich golden yellow, but rather smaller than the last-named, and the foliage is erect or slightly recurved. A good figure of this will be found in the *Botanical Magazine*, t. 88. This is a common plant, and flowers freely either in pots or planted out in a warm, sheltered, sandy border of rich well-drained earth. Like all its varieties it is decidedly tender, and fails to establish itself on cold, wet soils. Grown in pots of rich sandy compost in a cold frame or greenhouse, or even in the sitting-room window, it forms a conspicuous object, flowering in March and April, and lasting several weeks in beauty. All the varieties of this plant can be highly recommended, and are sure to please the most fastidious amateur cultivator of hardy bulbs. *N. Bulbocodium* is found wild, together with one or two of its yellow-flowered varieties, on the hills (Chambre d'Amour) near Bayonne, as stated in "Herb. Amar.," p. 412. It is the Greater Yellow Junquilia or Bastard Rush Daffodil of Parkinson,* who describes four varieties, one of

* Park. "Parad.," pp. 106, 107, figs. 6-8.

which, "the white Bastard Rush Daffodil or Junquilia," has white or cream-coloured flowers. The others, of which he gives wood-cut figures, are yellow-flowered varieties, differing in size and period of blooming. The same author gives their habitat as the Pyrenees, adding, "and wee preserve them carefully, for they are all tender." The white flowered form above alluded to, may possibly have been *N. monophyllus*, which has been recently reintroduced from Algeria, and is distinguishable by having slender leaves and deliciously perfumed white flowers. It bloomed in the Royal Gardens at Kew in January, 1870.

Parkinson, in his oft-quoted "Paradisus," p. 106, says that the white Hooped Petticoat Narcissus, or "Pseudo-Narcissus juncifolius flore-albo," as he calls it, hath long and very green leaves, "among which riseth up a short stalke, seldom half a foot high, bearing at the top, out of a skinie husk, one small white flower, sometimes declining to a pale colour, having six small and short leaves (segments) standing about the middle of the trunk, which is long and much wider at the top than at the bottom; the small outer leaves or wings are a little tending to green, and the trunk (as I said) is white or whitish, with the brims a little uneven." This plant is figured and described in "Gerard's Herbal," p. 34, fig. 5. Mrs. Loudon asserts in her "Bulbous Plants" that, "It is a native of Biscay, and is found in great abundance among the mountain Passes of the Pyrenees." The specific name *Corbularia Cantabrica* (Cambridge Narcissus), sometimes applied to it, originated from its having been grown about 1588 by a "Master Nicolas Belson, sometime of King's College, in Cambridge," as noted by Gerard. I find the white Hooped Petticoat very variable in size. (See Pl. II. and Pl. XXXIII., fig. B.)

Dr. Masters gives a very interesting paper, entitled "A Bouquet of Narcissus," in the *Gardeners' Chronicle* of May 14th, 1870, from which the following extract relating to this plant is taken :—

"Mr. Baker makes this a variety of the common *N. Bulbocodium*, but in the opinion of many it is deserving of specific honours, though truly the distinctive characters, such as the single leaf and broader perianth segments, &c., are too variable to be relied on. This is the plant the bulbs of which, gathered by Mr. Munby in Algiers, and placed in his herbarium, were found by him still retaining their vitality after a rest of twenty-two years, and in spite no doubt of

the poisonous lotion which so careful a botanist would be sure to apply to his specimens to obviate the attacks of insects. The bulbs were taken out of the herbarium when seen to be alive (see *Gard. Chron.*, 1869, p. 335), and placed in a greenhouse, where, as we learn from Mr. Munby, they flowered in the spring of the present year."

Mr. Munby gives some very interesting details respecting this charming plant, under the name of "*Corbularia Cantabrica*" in the *Gard. Chron.* 1874, p. 307, from which we learn that the plant exists abundantly in Algeria, particularly near Oran, and at Baghar on the borders of the desert to the south of Algiers. Although imported in large quantities by Mr. Munby and Mr. Peter Barr, both well-known cultivators, it does not succeed satisfactorily under cultivation; and this, the former gentleman suggests, is on account of the bulbs becoming dry and hard during transit; perhaps, however, it may be possible to bring over roots in boxes of moist earth, and I hope this suggestion may be adopted by future collectors. Clusius (1615) describes it as a Spanish plant, but if it once grew on Spanish soil it now appears to be extinct. This plant is the *Corbularia Cantabrica* of Haworth, *Narcissus Clusii*, Dunal. in "Bouquet Méditerranéen," and *Corbularia monophylla*, Sc. ex. Algeria, t. 47. It is beautifully figured in the last-mentioned work; the perianth segments, however, being much narrower than in the specimen before alluded to as having flowered at Kew. Although named *N. monophyllus*, the bulbs frequently produce two or three leaves each, these being slender and of a bright green colour, exactly like those of *N. juncifolius*.

N. (*monophyllus*) *Clusii* is figured (xylog.) and described under the name of *N. Clusii* in the September number of the *Revue Horticole*, 1874, pp. 329-330, and a smaller form with yellowish white flowers (*N. Grœllsii*, Webb), is there said to be cultivated in the Jardin des Plantes. *N. calathinus* is also grown in the same garden, whence the Rev. Harpur Crewe informs me he has received living plants. Speaking of the Hooped Petticoat Daffodils, Parkinson says, "The French and Low Countrymen do call them Trompettes, that is trumpets from the form of the trunke."

Narcissus tenuifolius, figured in Sweet's "Flower Garden," vol. ii. p. 114, is a distinct form of *N. Bulbocodium*, with small blackish bulbs, the size of robins' eggs, slender terete leaves fully a foot long,

dark green or slightly glaucous. The flowers are borne on scapes not half the length of the flexuose foliage, and are about three-quarters of an inch across with slender segments, and a decidedly six-lobed corona, the margins of the lobes being entire. It is said to bloom earlier than the common form. Herbert gives its habitat as being on the Chambre d'Amour hills near Bayonne, and Haworth says it flowers in March. *N. conspicuus* (Sweet, Fl. Gard., 2nd ser. vol. iv. pl. 326) is a deeper-coloured form, the flowers borne on scapes four to five inches in height, being but very slightly exceeded by the dark green slender erect leaves. The margin of the rich golden yellow corona is entire but slightly undulate. This is now common in gardens, but the variety cited above, with long leaves, pale flowers, and a six-lobed corona with entire lobes, seems very nearly lost to cultivators. The common form of *N. Bulbocodium* varies with entire, undulate, or bluntly toothed coronal margins.

Mr. Giles Munby in again writing to the *Gardeners' Chronicle*, March 7th, 1874 (see pp. 307-8), thus describes the difficulty of cultivating the White Hooped Petticoat Daffodil :—"This beautiful little gem seems to be rebellious to all the modes of cultivation I have been able to employ. Hot-bed, greenhouse, open air, all seem alike to fail. I saw last year at Messrs. Backhouse's nurseries at York, 150 pots plunged in ashes, each containing a bulb, and amongst the whole I perceived one solitary leaf. Messrs. Barr and Sugden have imported the plant from Algeria by the thousand bulbs, and I believe they have been equally unsuccessful. Mr. Tyerman, of Tregoney, has informed me that he has succeeded in forcing some bulbs to grow by stripping off all the outer coats. I myself have pots full of them, from two to four years planted: I look at them from time to time, and find that nearly all are alive, but they do not grow. I mentioned in your journal, some four or five years ago, that I had found some bulbs with growing leaves in my herbarium which had been gathered more than twenty years ago. A circumstance which I observed last spring at Algiers seemed to me to throw some light on the subject, which was this: The correspondent of Messrs. Barr and Sugden having sent over a large quantity of bulbs of *Corbularia*, had himself planted a handful in a pot, and placed them in a back yard in the town of Algiers. Within a fortnight every plant had shot forth leaves, and when I saw them they were four inches long. These bulbs had probably nearly all flowered

during the previous three months. What I wish to infer from this experiment is, that we let them lie too long before planting, and the bulbs' coats then get hardened by exposure to the air to such a degree that the hairy roots have not power to penetrate them, because the consignment to Messrs. Barr and Sugden, from which the few bulbs above referred to are taken, showed as much obstinacy as other imported bulbs. Seeds would, no doubt, grow, and I endeavoured to procure some last spring, but the mice are so fond of them that they eat them, capsule and all, before they are ripe. Many of the Algerian bulbs are so encased in the indurated soil during summer that no air can penetrate to them, and the first autumnal rains gradually soften the soil, which being heated by the summer's sun, causes them to shoot out into flower in two or three days after there has been a sufficiency of rain to moisten the soil. A very remarkable circumstance is this—that of all the *Corbularias* which have grown in England I have only seen leaves and not one flower; whereas, had they been left in their native soil and climate, nine out of ten would have showed first flower, and then a leaf. I am aware that it has been flowered at Kew, and I have seen it in cultivation at Montpellier many years ago. It ought to be quite hardy in England, for it grows naturally in Algeria, at great elevations, and in situations where frosts in winter are both frequent and severe. Near the coast it begins to flower in December, and in the interior (the *hauts plateaux*) it flowers as late as April."

Mr. Giles Munby exhibited native Algerian specimens of *N. monophyllus* at South Kensington, Jan. 19th, 1875. The flowers were much smaller than is generally the case, and the style very much exserted, although the latter is a character of minor importance. It is as well to mention here that Herbert (Herb. Am., p. 297) says, "style erroneously stated to be included;" while only half a dozen lines lower down the page he says, "If there be an old engraving with a prolonged style no dependence can be placed on it." My figure of this plant on Plate XXXIII. was carefully prepared from the fresh Algerian specimens above cited, and may possibly represent the form known as *N. Grœllsii*, Webb, or it may be only a starved form of *N. monophyllus*.

2. Narcissus Pseudo-Narcissus, *Linn.* (*Common Daffodil, or Lent Lily*).—This well-known and very variable plant is naturalized abundantly in many localities in this country, while some writers

regard it as an indigenous species. There are but few counties in England where it does not abound in copses, woods, orchards, paddocks, or gardens, and its yellow flowers are never seen to better advantage than where it luxuriates among grass and herbage in a semi-wild state. In some parts of Leicestershire, Herts, and Norfolk it abounds in moist meadows or on sloping hill-sides, and it is a noticeable fact that cattle will browse around the clumps and patches without injuring the flowers: the leaves, however, have proved fatal to cattle, although they are only eaten by them when other provender is scarce. There are at least a dozen well-marked forms of this plant, and these, while sufficiently distinct as species in garden parlance, are so completely united by other less marked intermediate forms, that I entirely agree with Mr. Baker in considering them as but well-marked varieties of the common Daffodil. The different forms vary very much in size; for example, *N. minimus* flowers almost as soon as it leaves the soil, the whole plant, bulb, roots and all, seldom exceeding four to six inches in height. The typical wild form varies from nine inches to a foot in height, while *N. Telemonius* and *N.* (*obvallaris*) *maximus* frequently attain a length of from two to three feet under good culture, their great golden-yellow flowers being proportionately large. Many of the varieties also are represented by double-flowered forms, both in a wild state and under cultivation, some of these being very ornamental in character, and valuable garden plants, where spring flowering displays are desired. The true double-flowered *N. Pseudo-Narcissus* has been lost to cultivators for years, and was only reintroduced to our collections by Mr. P. Barr, who obtained a few bulbs from the Isle of Wight in the spring of 1874. This is the Pseudo-Narcissus Anglicus flore-pleno of Parkinson's "Paradisus," p. 103, *n.* 5, who says it "is assuredly first naturell of our own country, for Mr. Gerard first discovered it to the world, finding it in a poor woman's garden in the west parts of England, where it grew before the woman came to dwell there, and as I have heard since is naturell of the Isle of Wight."

M. Henri Lecoq has some interesting notes on this plant in his "De la Fécondation et de l'Hybridation," and at page 383 of this interesting work it is stated, that the normal form of *N. Pseudo-Narcissus* is "less often seen in the environs of Grasse and in the larger portion of Provence than the double-flowered form," and this

is also the case in other continental localities. M. Lecoq in recommending the hybridization of this genus to the attention of cultivators, alludes to the single "Orange Phœnix" form of *N. incomparabilis* as being the result of a cross between *N. Pseudo-Narcissus* and *N. poeticus*.

One of the most curious of all the double Daffodils is that figured in Parkinson's "Paradisus," p. 107, fig. 4, under the name of Pseudo-Narcissus gallicus minor fl. pl. It is a continental form of the true Double Daffodil, from which it is readily distinguished by its segments being regularly superposed in six rows, just in the same way as in the flowers of Camellia "Lady Hume's Blush" of gardens. This is the *Ajax Eystettensis* of Dean Herbert. I have seen this plant several times, and our figure is from specimens which flowered at Tooting in the spring of 1874. It appears to be rather rare, although grown in gardens during the last two centuries. The whole flower is of a clear, though pale sulphur yellow, and it deserves a place in every collection as a distinct garden form of a permanent character. This is the "Pale Yellow Double Daffodil" or Bastard Daffodil of Robinus. Haworth erroneously considered this to be a double form of *N. calathinus*, but it has flat glaucous foliage. Herbert suggests that it is a double form of *N. Pseudo-Narcissus minor*.

Parkinson, at p. 89 of the above-mentioned work, figures a white flowered variety, rather smaller than the last mentioned but having the segments arranged in a similar manner. This he calls "Narcissus totus albus flore pleno Virginianus," the Double White Daffodil of Virginia. The bulbs are described as two-leaved, with the scape about a span high, "bearing one faire double snow white flower, very like in the fashion vnto the pale yellow double Daffodil or Bastard Daffodil of Robinus, for it is in like manner laid open flat, and composed of six rows of leaves, every rowe lying in order just opposite, as I said, one before another," and he adds "from the middle of this flower thrusteth forth a small long pointed forke or horn, white as the flower is." This form I have not yet met with, but it may possibly prove to be a double form of *N. poeticus*.

The common Double Daffodil of gardens and orchards, in many sequestered parts of the country, is a much larger plant, with deep green leaves, and the great rose-like flowers are of a much deeper golden yellow colour. This is a double form of Haworth's *N. Tele-*

monius, and well deserves culture as one of the most effective of the monstrous kinds. This is the plant alluded to by Parkinson at p. 102 of his before mentioned work, as Pseudo-Narcissus aureus Anglicus maximus, or Mr. Wilmer's Great Double Daffodil, who adds that himself and "Mr. Wilmer, of Stratford, Bowe, Esq.," received it from "Vincent Sion, borne in Flanders, dwelling on the bank's side in his lives time, but now dead; an industrious and worthy lover of faire flowers."

N. Pseudo-Narcissus grandiplenus is another distinct and beautiful double-flowered form, and this is also alluded to by the last-named author at p. 102, under the rather long name of "Pseudo-Narcissus aureus maximus flore pleno fine Roseus Tradescanti. The greatest double yellow Bastard Daffodil, or John Tradescent,* his great Rose Daffodil." It is a free growing and effective plant well worth general cultivation.

Mr. Shirley Hibberd, who possesses a fine collection of one hundred and seven species and varieties of Narcissus, thus writes on the doubling of the last named variety (see *Gard. Mag.*, 1874, pp. 598–624):—

"The doubling of the Narcissus is an interesting phenomenon, because certain species run into the double state hastily, while others appear quite incapable of such an extravagance. It is generally considered that doubling consists in the conversion of stamens and pistils into petals, and this undoubtedly takes place in the doubling of Daffodils; but the petals added to the original form usually exceed in number the organs regarded as their origin, and indicate not only a metamorphosis, but a multiplication of the several parts of the flower. We beg the technical botanist to allow the use of the term 'petal' in the present case for convenience, and to save the explanations we should feel compelled to offer if adhering to strict terminology. If we count the outer segments of the perianth as six—say, six petals—and suppose the tube to consist of six lobes united (a very likely case), the stamens being six in number, the stigma

* The elder Tradescant here alluded to was a Dutch gardener, and is said to have been in the service of Lord Treasurer Salisbury. He travelled on the Continent, and was in the fleet sent against the Algerines in 1620, at which time he collected plants in Barbary and the Mediterranean. About the year Parkinson published his "Paradisus" (1629), Tradescant was appointed gardener to Charles the First. He brought together the first noticeable collection of natural history objects ever formed in England, and, together with his son, was the originator of the Ashmolean Museum.—*Loud. En. Gard.*

three-lobed, we have only twenty-one parts in all. We made an attempt to count the parts in a flower of the *grandiplenus* variety of the common Daffodil last spring, and when we had counted (by pulling to pieces) sixty-six parts we found a lot of scale-like processes at the base, and gave up the task as too difficult. Mere multiplication of parts, however, is not the only phenomenon of a very double daffodil. There is an evident endeavour to develop leaves as well as petals as proper parts of the monstrous perianth. Hence, when the doubling process goes too far, we have a huge plethoric flower showing as much green as yellow—perhaps more green than yellow; and in such a case it is not a beauty, but, in one sense at least, 'a monster of such hideous mien, that to be hated needs but to be seen.'"

There is yet another and perhaps more common mode of doubling that is particularly worthy of attention. While we fondly imagine we are examining one flower possessing an extravagant number of petals, we may be puzzled with a sort of capitule—an aggregation of flowers in one mass with a normal calyx (the word must be allowed for convenience), and a stem altogether free of every trace of fasciation. Such a flower is the *grandiplenus* variety of the common Daffodil already referred to; yet amidst the confusion of crowded petals several centres may be made out, and the end of the investigation will be to resolve this one substantial and somewhat ugly flower into a dozen, or it may be a score, of flowers in a hypothetical scape or umbel, and all these several flowers are falsified in form by the conversion of their stamens into floral segments.

As remarked above, you will sometimes find in a very double and extra ugly flower of this sort a great many *green* petals. These I take to be the shrunk up *leaves* that belong to the several deformed flowers of the capitule, and if you dissect the capitule you will find a succession of petals or leaves or whatever they be, becoming smaller and smaller until they are mere scales, and the more scale-like they are the more fleshy and the less leaf-like is their texture, and the suspicion may dawn upon you, as it has dawned upon me, that in my supposed capitule or head, or umbel, or many-flowered scape, we have not merely a number of monstrous flowers, but a number also of bulbs, stems, and leaves, all shrunk into leaf-like or scale-like processes, the double Daffodil being in reality a proliferous production, a sort of Pelion upon Ossa of a very lowly kind, and one of the

most curious of all the vegetable monsters. A double Fuchsia contains more parts than a single one, so does a very double Pelargonium. The conversion of stamens and pistils into petals (which undoubtedly does take place) will not explain the whole phenomena of doubling.

Among all the single-flowered varieties of *N. Pseudo-Narcissus* none are more effective than *N. bicolor* and the sub-varieties, "*N. Emperor*," "*N. Empress*," and "*N. Horsfeldii*." *N. bicolor* has snowy white perianth lobes, widely expanded or patent, and a rich yellow corona. "*N. Empress*" differs in having much larger flowers, four or five inches across, while "*N. Horsfeldii*" is a smaller or intermediate form. "*N. Emperor*" is as large as "*N. Empress*," and simply differs in having clear or sulphur-coloured yellow segments instead of white ones.

The two beautiful varieties "*N. Empress*" and "*N. Emperor*," are doubly interesting, apart from their striking size and beauty as garden plants; their origin is well known. In the *Floral Magazine* (old series), p. 439, the following details are given :—

"These two fine hybrid Daffodils were raised by the late William Backhouse, of St. John's Walsingham, a most persevering and successful amateur cultivator of bulbous plants, to which for nearly or quite twenty years he gave large attention; they are crosses between *Narcissus bicolor* and *Narcissus Pseudo-Narcissus*. . . . . These are the finest specimens known, and the children are finer still. It will be seen that "*N. Empress*" does not differ materially from its parent *N. bicolor*, but it is distinct as a seedling both in constitution and in being far finer than its parent, being of much more vigorous habit, larger in flower, and a much more abundant bloomer. "*N. Emperor*" obviously differs from its parent in several particulars, and in having broad yellow petals."

No doubt some of the larger forms of *N. Pseudo-Narcissus*, as *N. obvallaris*, *N. major*, *N. lorifolius*, or *N. Telemonius*, have been used in the production of the above, together with *N. bicolor*, which is itself only a rather more distinct variety of the same species, although Linnæus considered it worthy of specific honours.

Some forms introduced from Spain, about 1600, are nearly all white, or white with lemon or sulphur-coloured cups. Haworth speaks of four kinds—*N. cernuus*, *N. moschatus*, *N. tortuosus*, and *N. albicans*; they are, however, but slightly dissimilar, being simply pale-flowered continental forms of our common Daffodil.

During the spring of 1874, Mr. Peter Barr and other cultivators sent me between twenty and thirty varieties of this plant alone, and the most distinct of these are represented in our Plates. Some of the forms given me by other cultivators were extremely curious. I was fortunate to obtain fresh flowers of the clipt trunk Daffodil, "Pseudo-Narcissus tubo quasi abscisso" of Parkinson's "Paradisus," 107, fig. 1, from Mr. T. Ware, of Tottenham, and also from the Rev. W. Kendal, of East Sulworth, from whose collection I also had a fine form with the cup beautifully fringed. Parkinson figures one form having a hexangular clipt trunk, and this I have not seen. *N. lorifolius* has, however, a decidedly 6-angled cup, and it is possible Parkinson's plant may be a small-flowered or starved form of this variety. Herbert mentions the two latter plants on the authority of Haworth, and appears to doubt their existence on no other grounds than that he had not seen them himself. I have carefully studied Parkinson's figures and descriptions in connexion with living plants, and find him so accurate in his own quaint way that, like Haworth, I consider his contribution to the history of the *Narcissi* most valuable, making due allowance for the time at which his book was produced. The size of the flowers varies much in different soils, and even in the same soils those clumps which have occupied the same position for several years get weaker unless manured, since they soon exhaust the soil in their immediate vicinity. The result of this is that the central bulbs in large clumps and masses produce smaller flowers; and probably this circumstance has often misled the earlier botanists, who were satisfied with cut specimens, into renaming common varieties.

3. Narcissus calathinus, *Linn.* (*Reflexed Daffodil, with a Long Cup*).—This plant closely resembles the next in general habit, and is distinguished by having the cup the same length as the perianth-segments, the whole flower being, however, much larger, and of a creamy-white or pale sulphur-yellow colour. It is a native of the Isles of Glénan, and is well described in Grenier and Godron's Fl. Fr., p. 261, and also in De Candolle's Fl. Fr., v. p. 324. *N. triandrus* is not found in France, so far as I am aware, hence we may infer that these plants are sufficiently distinct to be considered separate species. It is rarely met with in cultivation in this country.

I am indebted to Mr. Baker for a tracing of the plant from which his excellent description was made. This plant, from

the size of the flower and its distinct form, is well worthy the attention of cultivators. Had it been *an Orchid* growing beneath the mythical Upas-tree itself, it would long ago have been largely introduced, but it is only a beautiful hardy bulb, whose habitat is within a few hours' ride from London, so, like the *N. dubius* of Mentone, and hundreds of other lovely hardy flowers in Spain and Sicily, it stands a good chance of being neglected for years to come.

Since writing the above, I am informed by the Rev. H. J. Ellacombe, that he has succeeded in obtaining a bulb or two of this rare plant, and that he hopes to flower it eventually in his garden at Bitton, where so many of the charming wild flowers of other temperate countries have found a congenial and welcome home.

A correspondent of the *Gardeners' Chronicle*, February 7th, 1874, p. 178, in speaking of this plant, makes the following highly interesting remarks with respect to its habitat and peculiar conditions of growth :—

"South of the coast of Finistère is a group of islets, called the Isles de Glénan. On one of these, the Ile Drénec, is found a plant, *Narcissus calathinus*. Of this rare plant two small bulbs were kindly sent to the writer from the Brest Botanic Garden, accompanied by the warning, 'You know (the recipient did not know) that this plant, although it is Bretonne, does not grow in the open ground at Brest, consequently I advise you to cultivate it in a frame.'

"To be native and yet not hardy was so extraordinary a case, although we have something analogous in *Adiantum Capillus-veneris*, as to necessitate a further inquiry. To which a friendly hand replied: Monsieur Blanchard has given you excellent directions for the culture of *Narcissus calathinus*. It grows in the north of the Drénec, one of the Glénans, and is found on short-grass greensward patches which are constantly sprinkled with particles of sea-water brought by the winds. It follows that the temperature (already milder in the Gulf of Morbihan than at Brest) is still more softened, and that it never freezes. But above all, there is something in the idiosyncrasy of the plant which delights in these soils, where heath mould is mingled with sea salts, and where (the grand point) the air is saturated with moisture, so that it cannot live in the comparatively dry climate of Brest, where it rains on an average 180 days in every year, and on some of those days there are from fifteen to twenty showers, in the intervals between which the sun

breaks out more or less frequently. Monsieur Thuret, the able phycologist, cultivates it in the open air at Antibes, where it succeeds very badly, which proves that something else besides temperature is requisite for its healthy existence.

"These facts suggest the question, How did *Narcissus calathinus* get to the Ile Drénec if it cannot live on the present mainland? Is it probable that a plant in a wild state should spontaneously become more tender in constitution? Was the climate of Brittany milder when those islands still formed part of the Continent? Or was this Narcissus left there by some shipwrecked vessel, as is supposed to be the case with the Guernsey Lily (*Nerine sarniensis*), a native of Japan? If so, where is the Narcissus' original home? The spores of an Adiantum or an Asplenium may be wafted by winds from one quarter of the world to another, and grow where they find a suitable locality, in sheltered caverns where frost never penetrates; but that could hardly happen with the seeds of a Narcissus, though currents might possibly transport the bulbs some distance. It is a problem of botanical geography whose solution seems far from obvious."

Herbert, at page 308 of his "Amaryllidaceæ," includes this plant under the name of *Ganymedes capax*. "*N. calathinus*, Red. Lil., 177. Perianth, pale yellow; tube and cup, each about five-eighths; limb about seven-eighths of an inch long; style shorter than cup. Native of the Isles of Glénan, Dep. of Finisterre."

A paler form he calls "*G. reflexus*. Brotero. Flor. Lus. *N. calathinus*, Red. Lil., 410. Perianth, sulphureous white; tube and cup, each about seven-eighths; limb, one-quarter inch long; style shorter than cup. On the mountains of Gerez, near Amaranta, and elsewhere in Portugal, and in the Isles of Glénan. The Portuguese plant is called sulphureous white; that of Glénan is figured as quite white by Redouté."

Haworth calls this plant *Assaracus capax* in his Monograph, p. 4, and mentions a double form with reference to Nob. in *Phil. Mag.*, June, 1830, p. 134. The double-flowered plant he meant is represented in our Plate X. (figs. c, d), and is a singular double-flowered form of the common Daffodil (*N. Pseudo-Narcissus*).

According to Herbert (Am., p. 313), Linnæus never had a specimen of this plant, but named it in MS. on the margin of the first edition of his Syst. Veg., and published it in the second

with a reference to Clusius, No. 1, Juncif. 9, and Rudb. El. 2, p. 60, f. 5.

The *N. calathinus* of Linnæus was a form of *N. odorus*, and the figure in the *Bot. Mag.*, xxiv. t. 934, under the same name, is a form of *N. odorus* closely resembling our var. *heminalis*, Pl. XXIV.

I have referred to Redouté's Liliaceæ, Plates 177 and 410. The first-named figure represents a plant 15–16 inches in height, having a bulb as large as a pigeon's egg, bearing four flat, slightly glaucous, acute leaves, and a 2-flowered scape. The leaves are decidedly shorter than the scape, and the clear yellow flowers are suberect, or only slightly nodding.

The variety (*N. calathinus var.* β) figured on Plate 410 is quite distinct, although undoubtedly belonging to this species. The

Narcissus calathinus (*after Redouté*).

plant is about the same size as the last, but the leaves are much longer than the 2-flowered scape, and the corona is longer, pure white in colour, the reflexed segments being also white, but suffused with straw-colour or sulphur-yellow. The leaves of this plant are said by Haworth to be lorate and flat (lorata plana), and they are erroneously figured as flat in Red. Lil., t. 177 and t. 410. This

plant is cited as the *N. reflexus* of Lois, in Mém. sur Narc. indig., p. 44, Mém. des Savans Etrang., 2, p. 633 ; also Brot. Fl. Lus.

A full descriptive account of *Narcissus calathinus*, with reduced woodcut figure, will be found at p. 89 of the *Revue Horticole*, 1870. It is said to be in cultivation in the Jardin des Plantes, and also in the grounds of MM. Vilmorin and Co., where it flowers in June.

Group II.—Mediocoronatæ. (*Medium-crowned Narcissi*).—Crown half as long as the divisions, or in one or two exceptional cases three-quarters as long.—J. G. B.

4. N. triandrus.
5. N. poculiformis.
6. N. Macleaii.
7. N. incomparabilis.
8. N. odorus.
9. N. juncifolius.
10. N. dubius.

4. Narcissus triandrus, *Linn.* (*Reflexed, or Cyclamen-flowered Daffodil, Turning Jonquil*).—Few plants in the genus are more distinct and effective than this pretty little species. My specimens came from Mr. Barr, and had bulbs as large as pigeons' eggs, each bearing from two to four deep green, slender, semi-cylindrical leaves, and a 3–5-flowered scape. The latter is rather longer than the rush-like shining foliage, being 12–16 inches in height. The flowers are borne on slender pedicels, which, like those of the Jonquil, vary from 1–3 inches in length. The ovaries are turned sharply in a horizontal direction from the pedicels. The perianth tube is slender, 1–1½ inches in length. Segments three-quarters of an inch long, sharply-reflexed, parallel with the tube, about three-quarters of an inch long, and of a clear lemon-yellow colour. Cup rather paler, one-quarter to half-inch long, slightly narrowed at the mouth, which gives it an inflated or globular appearance. It is rather rare, although long introduced to our gardens. The flowers are of a thinner and more delicate texture than most of the other species ; but it withstands both sun and spring frosts better than many others of a more robust character. It blooms in April, and its flowers, which are admirably adapted for cutting, last for a long time in water.

This beautiful species was known to Parkinson, who gives good descriptions of four varieties at p. 92 of his "Paradisus;" and at p. 93 (figs. 2, 3) he figures two forms, in one of which the style is represented as exserted, while it is evidently included in the other. The kinds he alludes to are said to differ from each other as follows:—

"N. juncifolius flore albo reflexo," with pure or "snow-white flowers."

"N. juncifolius flore luteo reflexo," with flowers of a golden-yellow colour.

"N. juncifolius chalice luteo reflexis foliis albidis," having creamy-white segments and a golden-yellow cup.

"N. juncifolius chalice albo reflexis foliis luteis." This is the reverse of the last-named, having yellow segments and a white chalice or corona.

A deep-coloured form of this plant is represented in the *Bot. Mag.*, t. 945, under the name of *N. trilobus*. It has also broader segments, not so decidedly reflexed as is usually the case in this species and the last. Little reliance can be placed on the colour of the flower of these plants, as many of the forms when they open their flowers are of a clear golden-yellow, which gradually becomes paler until they die off nearly white. The perianth segments of *N. bicolor*, *N. Empress*, and *N. Horsfeldii* are white when they open, and gradually acquire a creamy tint as they fade. Doubtless many of the names of varieties alluded to by Haworth and Herbert, as well as those of the earlier writers, have been originated in this manner. My experience proves that it is extremely unsafe to place any reliance on the colour of cut specimens of Narcissi.

Our Plate represents not the typical plant of Linnæus, but that form of it known as "*Pulchellus*," and the only form now in cultivation in English gardens.

5. Narcissus poculiformis, *Salisb.* (*The White Mountain Daffodil*). —This plant is rather rarely met with in gardens under the name of *N. montanus*, and its deliciously perfumed white or creamy flowers are freely produced on well-grown plants. As stated by Mr. Baker, it is not met with in a wild state, and had better be considered as a garden hybrid, notwithstanding that it has been known to cultivators for the last two centuries. This view was entertained by Herbert, who suggests that *N. Pseudo-Narcissus* var. *moschatus* and

the white-flowered *N. dubius* were probably its parents. I am, however, inclined to think that both this plant and its congener, *N. incomparabilis*, are hybrids between *N. Pseudo-Narcissus* and *N. biflorus*, or some of the larger forms of *N. Tazetta*. The flowers are borne singly or in pairs on scapes a foot or more in height, the segments being pure white with their margins slightly inflected or involute about the centre. The cup is nearly cylindrical, plaited with a finely-jagged or erose margin, the colour being either pure white or a pale lemon-yellow. The flowers of this plant are very seldom seen in a perfect condition, and one or two of its abnormal forms are shown in our Plate. I am not aware that this plant is found in a double-flowered state, and I think its doubling improbable, since in nearly all the living specimens I have seen it evinces a tendency towards a reduction, rather than a multiplication of its parts.

Parkinson, however, figures and describes a form of this plant having a second row of depauperated segments around the cup. This he calls "Narcissus montanus albus apophysibus præditus," the "white-winged Daffodil with ears," or the "white-winged Daffodil." This plant is one from which all sorts of sports may be expected, indeed I never remember to have seen two flowers exactly alike on the same plant, and their vagaries, with respect to the number and arrangement of its segments, vary from year to year. Some of Mr. Leeds' seedlings, now in Mr. Barr's collection at Tooting, form connecting links between this species and *N. incomparabilis*.

Parkinson's description at page 72 of his "Paradisus Terrestris" is the earliest I have seen, and, together with his woodcut figure (t. 71, fig. 6), is very characteristic of the plant. He calls it "Narcissus montanus fine nonpariel totus albus," "The white Nonpariel or Peerless Daffodil." "This white Daffodil is in root and leafe like unto the former mountain or winged Daffodil, but that they are a little larger. The stalke from among the leaves riseth up not much larger than it, bearing at the top one large flower, composed of six long white leaves, each whereof is as it were folded halfeway together in the middle, whereof standeth forth a large white cup, broader at the mouth or brims than at the bottome, very like unto the lesser [yellow Incomparabilis or Lady Mattenesse] Nonpariel before remembered, which hath caused it to be so entitled; the sent whereof is no less sweet than the former." The specific

name, *N. montanus* of Parkinson, ought to take precedence of that given it by Salisbury (*N. poculiformis*) at a much later date.

6. Narcissus Macleaii, *Lindl.* (*Mr. Macleay's Daffodil*).—We have here a distinct plant, not unfrequently met with in gardens, although it is a very questionable species from a botanical point of view, and has never been found in a wild state; hence we must infer that it is an hybrid and of garden origin. The flowers are borne singly on slightly compressed scapes, while more rarely two-flowered scapes are produced. The ovate segments spread horizontally, and are pure white, the cup being bright-yellow, cylindrical or slightly plaited about two-thirds the length of the segments, and very slightly lobed at the mouth. The Plate in the *Botanical Magazine* was taken from a specimen which bloomed in the collection of Alexander Macleay, Esq., after whom it was named, and it is there stated that the plant is supposed to have been brought from Smyrna. Parkinson calls this "Narcissus albus oblonga calice luteo præcox minor," "The small early-flowering Daffodil with a long cup," and at p. 73 of his "Paradisus Terrestris" he gives an excellent description of this plant, in which he notes that the leaves are "very greene, and not whitish as in others," and that the "long round yellow cup is half an inch long or better." He contrasts it with the different forms of *N. incomparabilis*, which it somewhat resembles. As a garden plant it is quite distinct from all the other forms, and well deserves a place in the collection.

7. Narcissus incomparabilis, *Curtis* (*The Incomparable, or Great Peerless Narcissus*).—This is a robust and showy plant well known to all cultivators of hardy spring flowering bulbs as one of the most conspicuous in the whole group. Like most of the other cultivated forms this is a very variable plant, as shown by our figures. In habit it is very vigorous, especially when planted on a richly-manured, well-drained border, and in such situations it reproduces itself very readily by means of offsets. Parkinson describes several varieties of this plant, which seems to have been commonly cultivated in gardens two or three centuries ago. When well grown, the plant frequently attains a height of from one to two feet, and bears its large broadly stellate flowers in great profusion. The typical form has primrose-tinted perianth segments, and a clear yellow chalice-shaped cup, rather irregularly crumpled or jagged at the margin, and slightly six lobed. Another even more striking

form has the mouth of the cup suffused with rich orange, and is known as *N. incomparabilis aurantius* of gardens. There are two white-flowered forms with clear lemon-yellow cups, and these differ in the breadth of their segments, as also in their time of flowering. The star-shaped, narrow-petalled form is *N. incomparabilis* "Stella," one of the late Mr. Wm. Backhouse's hybrids, and according to Mr. Barr the earliest flowered form of the group by about a fortnight. *N. incomparabilis albus* has white segments, the only particular in which it diverges from the normal form. The fine single-flowered form, from which the double orange Phœnix of gardens and the Dutch nurseries has originated, bears a creamy white or pale sulphur coloured flower, having rich orange, or vermilion-tinted coronal segments, and is a very effective plant. *N. incomparabilis semi-partita* is a pale form of the type with the cup cleft into six irregular lobes for nearly two-thirds its entire length. The above are distinct enough as garden plants, and deserve a place in every collection. In addition there are three or four double-flowered forms bearing very handsome flowers. These are *N. incomparabilis fl. pl.*, bearing clear yellow flowers very double. *N. incomparabilis aurantius fl. pl.* with yellow divisions, among which are interspersed the segments of the bright orange cup. This is the "butter and eggs" Daffodil of old cottage and manse gardens. Herbert, at page 312 of his "Amaryllidaceæ," in referring to the forms of *N. incomparabilis* (or *Queltia fœtida*) says :—"The double *Narcisseæ* are apt to degenerate in some seasons, or, by accident, to semi-double and single, and I have seen the butter and eggs produce a perfect single flower of aurantia [the orange-rimmed form of *N. incomparabilis*]. I have seen the orange Phœnix, when becoming semi-double, with three styles quite distinct. They were parted by the process of doubling the flower, and when it became accidentally single they were not re-united." One of the most effective plants in this section is the double-flowered "Orange Phœnix," which has creamy white divisions, among which the, in part, disintegrated, vermilion-tinted cup shows to the best advantage. This is worth a place in every herbaceous border. *N. incomparabilis albus fl. pl.* is a beautiful and finely formed creamy white variety, well worth cultivation wherever cut flowers for vases are in demand. This is sometimes met with in good gardens, grown under the name of "*N. plenus sulphureus*," or "sulphur crown."

Although found as a wild plant it is a very questionable species, and may be produced by crossing *N. Pseudo-Narcissus* with *N. poeticus*. It is rather a singular fact that the bright orange colour observable in *N. incomparabilis aurantius* is exactly reproduced by mixing the colours reddish purple and bright chrome yellow together on the palette, and it has occurred to me that in the plant itself this tint owes its existence to the mingling of the purple found around the margin of the Poet's Narcissus with the bright yellow of the common Daffodil.

Apart from its usefulness in contributing cut flowers, all the forms of this species are very effective arranged in large clumps or masses, especially if planted in the vicinity of fresh green herbage, which serves to enhance the brilliancy of their flowers.

It is commonly supposed that the flowers of this species are not of an agreeable odour. Hence, Herbert's name of *Queltia fœtida*, which must, of course, give way to the prior one of *N. incomparabilis*. The fresh specimens from which my illustrations were taken were perfumed nearly exactly like the flowers of the common Lilac (*Syringa vulgaris*), while in others I could detect a vinous odour. I notice also that the odour of all the Narcissus flowers varies in intensity at different times of the day, being most apparent in the early morning, while it frequently becomes completely changed in its character as they advance in age. I have noted the same thing in many *Orchid* flowers, some of which possess distinct odours at different times of the day, while nearly all the white-flowered species, especially the *Angræcums*, diffuse their odour most freely during the night. The same rule holds good among certain of the *Cactaceæ*, of which the night-blowing species of *Cereus* may be cited as examples. I allude to these interesting facts here, because as a rule the specific odours of flowers are disregarded by nearly all writers, and I have often thought that this field would yield interesting and valuable information if carefully studied in an intelligent and scientific manner.

N. Sabini is merely a pale-flowered form of *N. incomparabilis*, having short, broad segments, and an elongated cup. Some of Mr. Leeds' seedlings come very near it, and, judging from its pale colour, *N. moschatus* and *N. poeticus*, or *N. biflorus*, have been the parents. Nothing appears to be known of it previous to its discovery in

1818, when Mr. Baxter found it growing in the Oxford Botanic Garden, and sent it to Mr. Sabine. It is said to come true from seed (Loud. Bulb. Plts., p. 173).

8. Narcissus odorus. *Linn.* (*The Sweet-scented Narcissus, or Campernelle*).—This free-growing plant is very commonly cultivated, especially in gardens near London, for its flowers, which are brought to Covent Garden Market in large quantities about the middle of April. It is very useful for the last-mentioned purpose, as it blooms just after *N. Pseudo-Narcissus* is out of flower, and comes in before the flowers of *N. poeticus* appear in quantity. It is an effective species, seemingly intermediate between *N. jonquilla* and *N. incomparabilis*, both segments and cup being of a deep golden-yellow colour, and the flowers are moreover deliciously fragrant. It is very robust in habit, and readily establishes itself in any deep, rich, well-drained, garden soil. The plant is rather variable, and grows from a foot to over two feet in height, having deep glossy-green, semi-cylindrical leaves, about as long or longer than the scape. The individual flowers vary from one to nearly three inches across. I have four forms from Mr. Barr's collection, all distinct as garden varieties. The typical plant grows about eighteen inches in height, the scapes bearing from one to four, but generally two, flowers each. This plant is easily distinguished by the corona being elegantly bell-shaped or campanulate, with six rounded lobes, as noted by Linnæus, in his Syst. Veg., p. 317. *N. odorus* var. *rugulosus* has flowers nearly three inches across, and is the largest flowered form I have seen. Apart from the size of its flowers it may be easily distinguished from the type by the cup being slightly obconical, or nearly straight, and much plaited towards the mouth. *N. odorus* var. *heminalis* is similar to the last, but the flowers are much smaller, rarely more than an inch and a half across, and the cup is not so distinctly plicate. This form agrees pretty nearly with the figure in the *Botanical Magazine*, t. 78, vol. iii. *N. odorus* var. *minor* is the smallest in this group, the plant rarely exceeding a foot in height, even when grown in rich soil, and the flowers are like the type in every way, except in being only about an inch across. This form has usually three or four flowers to each scape, one or two of these being often greenish in colour, or but partly developed.

In addition to the foregoing there is a double-flowered form of the type which is not unfrequently met with in cultivation, under

the name of the "Double Campernelle," either forced in pots or planted in the open borders.

Narcissus odorus has been grown in English gardens for the last two or three centuries, and Parkinson gives good figures of two of the straight-cupped forms* which answer exactly to our "*rugilobus*" and "*heminalis*." The first he calls "Narcissus juncifolius maximus amplo calice," "The great junquilia with the largest flower or cup;" and the latter "Narcissus juncifolius luteus magno calice," "The yellow junquilia with a great cup." The double-flowered form is alluded to as "Narcissus angustifolius aureus multiplex," or, "The golden double narrow-leaved Daffodil."†

N. odorus, *N. juncifolius*, and *N. jonquilla* constitute a distinct yellow-flowered group, only distinguishable from *N. Tazetta* by their having deep-green semi-cylindrical (not flat) foliage. *N. dubius* may be considered as the connecting link between these two groups. According to Herbert's Amaryllidaceæ, p. 416, a fine 2-flowered variety of *N.* (Queltia) *odorus* grows among the chestnut trees near the church of N. Senhord del Monte in Madeira.

9. Narcissus juncifolius, *Requien.* (*Rush-Leaved Narcissus, or Smallest Daffodil*).—This is one of the smallest plants in the genus, seldom growing above six inches high under cultivation, and bearing one to five flowered scapes, which are generally a little longer than the leaves. It is a very variable plant; the specimens from different localities in the Kew Herbarium varying very much in height, size of flower, number of flowers on a scape, and other particulars. One form bears a tall five-flowered scape, somewhat resembling *N. dubius*, but the leaves are much more terete, and the flowers bright yellow. Another short-leaved form has solitary flowers on scapes six to nine inches high, the flowers being nearly an inch across, and having a large flattish cup-shaped crown. Some forms in cultivation have straight or cylindrical cups about half or even three-quarters as long as the perianth segments, while other forms have distinctly campanulate or bell-shaped cups. The breadth of the perianth lobes also varies greatly in the different forms of this as in nearly every other species of the group.

The plant is very graceful in habit, and well worth culture,

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* Park. "Parad.," t. 89, fig. 5, and t. 93, fig. 4. † Ibid., t. 93, fig. 7.

although at present it is anything but common in our collections. My specimens came from Mr. Barr, Mr. Parker, and Mr. Ware; and the Rev. Harpur Crewe, of Drayton-Beauchamp near Tring, who is well known as an earnest lover of bulbs and hardy flowers, sent me a very interesting form with a straight fimbriated corona that I have not seen elsewhere in cultivation. It grows freely in the open border in some localities, although as a rule the plants appear to be rather tender, and it is not advisable to plant them out except on warm, well-drained soils. Mr. Barr constructs beds of sandy, well-manured compost for his tender kinds, and these beds being made above the general ground level, are drier and warmer than a common herbaceous border, or beds, made in the usual way. This simple plan is well worth adopting in the case of the present species, *N. bulbocodium*, and other rare or tender kinds. The plant is figured in Wooster's "Alpine Plants," t. 115.

10. Narcissus dubius, *Gouan.* (*The Questionable Daffodil*).—This is a very rare and pretty white-flowered plant, not generally in cultivation. The flowers remind one of the yellow-flowered *N. juncifolius*, while in general habit the plant comes near some of the narrow-leaved forms of *N. Tazetta*. The plant is well figured and described by the late J. T. Moggridge, F.L.S., in his admirable "Contribution to the Flora of Mentone." The last-named author says:—"*N. dubius* is one of the grateful exceptions to the rule among Narcissi, for it is found in wild rocky situations in the mountains near Toulon and Hyères, and never, as far as I know, in cultivated ground." He gives the habitat as San Remo; Mr. F. Hubbard, verified by M. Panizzi, February 7th, 1867, Mont Coudon, near Hyères; Dr. Shuttleworth, March 24th, 1868, adding that he himself collected fruit in the same locality. Although now lost to cultivators, there is every probability of its being again introduced. The plant was evidently well known to Parkinson, who gives a creditable woodcut figure at p. 93, fig. 1, of his Paradisus, under the name of "N. juncifolius albus," and adds: "This white Rush Daffodil hath small long leaves a little broader and of a whiter greene colour [glaucus] than the ordinary Rush Daffodils; the stalke riseth up halfe a foote high or more, bearing two or three small white flowers vpon a stalke, yet somewhat bigger than the common yellow Rush Daffodil, having a small round cuppe in the middle, white also, as the leaves [petals] are. The seede is small,

black, and round, as other seedes of Daffodils are: the root is small, round, covered with a blackish coat."

Like its congener, *N. juncifolius*, this plant varies very much in its habit of growth, size, and number of flowers on a scape. The specimens in the Royal Herbarium at Kew vary from two or three to nearly eighteen inches in height, the scapes being one to seven flowered; and Herbert, in his "Amaryllidaceæ," t. 43, figures three forms from Bentham's Herbarium, which however differ but very slightly from each other.

A fruiting specimen in Herb. J. Gay, at Kew, is labelled "Fort-rouge, near Toulon." Although sometimes confounded with the short-petaled forms of *N. papyracea*, it is quite distinct in both leaf, form, and flower.

In Redouté's Liliaceæ, t. 409, is figured a pretty little white-flowered Narcissus (*N. pumilus*), which may possibly be a starved form of our present species, although it looks very distinct. The bulb is about the size of a blackbird's egg, bearing 6 flat, glaucous, thin, and grassy-looking leaves, barely six inches in length, and about 2 lines broad, with a slender 1-flowered scape, shorter than the leaves. In form the flower is very similar to Herbert's *Hermoine æquilimba* (Herb. Am., t. 48, f. 1), which is doubtless a small white-flowered *N. Tazetta*, with an orange cup, and leaves fully half an inch wide. The flower of *N. pumilus* is copied from Redouté by Herbert (see Herb. Am., t. 41, f. 26), and I have added a tracing of the flower also from Redouté, the plant being described in Red. Lil. from a cultivated specimen, its native habitat not being known.

Group III.—Parvicoronatæ. (*Small-crowned or Little-cupped Narcissi.*)—Crown less than half as long as the divisions of the perianth.—J. G. B.

11. N. Tazetta.
12. N. gracilis.
13. N. intermedius.
14. N. pachybolbus.
15. N. jonquilla.
16. N. biflorus.
17. N. poeticus.
18. N. viridiflorus.
19. N. elegans.

20. N. serotinus.
21. N. Broussonetii.
22. N. canariensis.

11. Narcissus Tazetta, *Linn.* (*The Little-cupped Daffodil, or Polyanthus Narcissus*).—This is a well-known plant, remarkable alike for its protean variability and wide geographical distribution. It is one of the most effective species in the genus, and it is doubtless on account of its beauty, fragrance, and easy culture that it has invariably been a favourite decorative plant in this country during the last two or three centuries. Many different forms were known to Lobel, Clusius, Gerard, and Parkinson, and it was without doubt well known and generally cultivated in English gardens long before their time. Parkinson gives excellent figures of five kinds at p. 81 of his Paradisus, and describes about fifteen varieties, which he quaintly tells us were brought from Algiers and Fez, while at page 83 he says:—"These Daffodils have been brought unto us from divers places, and grow naturally in many places of Spaine, that are open to the sea; they grow likewise about Montpelier and those parts in France. They have been likewise sent among many other sorts of Daffodils from Constantinople, ... and grow plentifully in Italy, about Pisa in Tuscany, from whence we have had plants to furnish our gardens." In describing a form of this species under the name of "N. Narbonensis vulgaris," or "The ordinary French Daffodil," he says:—"This Daffodil hath long and broad green leaves, the stalk is a foot and a half high, bearing at the tops divers flowers . . . . consisting of six white leaves (perianth segments), somewhat round; the cup is yellow in the middle, small and round, like unto an acorne cuppe, or a little fuller in the middle; this is the form of that sort which was first brought vnto us. But since there is found out some whose cup is shorter, others flatter, some of a paler, others of a deeper yellow colour, and some that have their cuppe longer than the rest." These natural varieties have been largely augmented by the Dutch florists, who raise numerous seedling forms and cultivate hundreds of acres of this plant alone, to supply forcing bulbs for the English and continental florists and amateur cultivators. So long ago as 1800 between two and three hundred garden forms were cultivated by the Dutch florists. The different forms of this plant are largely grown by the Chinese for the decoration of apartments

and temples, and large quantities are sent every year from Chinchow to Canton for religious rites and ceremonies at the advent of the waning year.

A correspondent of *The Garden* gives a very interesting account of a fine variety of *N. Tazetta* (Grand Emperor) in that periodical for 1872, p. 543, from which the following Chinese legend is given, which may account for the "origin of species" as regards this fine plant:—

"Once upon a time a father left his property to two sons, with the understanding that it should be equally divided; but the elder son seized all the tillable land and left the younger nothing but an acre covered with rocks and water. The younger son, unable to obtain justice, sat down at the water's edge bemoaning his misfortune. A benevolent fairy appeared, and, giving him these Narcissus bulbs, told him to drop them into the water. Shortly afterwards their flowers were developed, and the neighbours crowded to admire the fairy gift. In the course of a few years he accumulated a fortune by the rapid increase and sale of his bulbs. Then the elder brother, envious of the younger's prosperity, bought great numbers of the bulbs—hoping to obtain a monopoly by getting all of them—at so heavy an expense that he was obliged to mortgage his property to procure funds for the purchase. He planted all his land with the bulbs. They soon began to die, as they only flourish in water. He was ruined, while his brother, who had bought the mortgage, foreclosed it, and became possessed of the whole estate in time to replant some of the dying bulbs in the watery acre."

Apart from the foregoing story, this variety is one of the handsomest of the whole group, and first found its way to our gardens from America, where it had been previously introduced from China by the emigrants who came from the Celestial Empire to the Western States.

The Chinese florists rarely use soil in the forcing of *N. Tazetta*, but plant the bulbs in pots and vases, filled with water and either sand or small stones. The use of the latter is simply to retain the bulbs in their places, and to prevent them floating or toppling over when in flower. The plant was formerly grown in glasses of water for the decoration of apartments and windows in this country forty or fifty years ago, but pot culture is now generally adopted—a compost of richly-manured sandy earth being employed.

At least forty or fifty of the continental forms of this plant, peculiar in many cases to particular localities, are described and figured in various works as distinct species, and it is certainly possible to select at least twenty varieties, quite distinct from each other in form, size, habit, colour, locality, and time of flowering; but these again are connected by other intermediate forms in so close a manner as to render the course adopted by Mr. Baker in his Review the only safe one to follow.

As a species the plant ranges from *N. poeticus* and *N. biflorus* (to which some of the *N. orientalis* and *N. Cypri* forms, figured in the *Botanical Magazine*, are very nearly related) through innumerable varieties, some of which approach *N. dubius* and *N. juncifolius*, while other of the small white-flowered kinds closely resemble *N. pachybolbus*, and the slender *N. canariensis*. This plant has been irreverently styled the "dustbin" or "scape goat" of the genus, on account of its protean variability, just as the ubiquitous Euphorbiaceæ is frequently made a temporary refuge for all undeterminable species of other natural orders.

Moggridge gives excellent figures of two or three forms in his "Contribution to the Flora of Mentone," where he says:—"The profusion in which this lovely plant grows in the olive and vineyards near Mentone, can only be compared with the abundance of our own Daffodils as they spring in our well-remembered English nooks." Also adding: "At Mentone, one pretty variety, distinguished by its slender habit, small flowers, the short perianth divisions of which spread separately like a star . . . . is the *N. canaliculatus* of Guss.; and another with long, loose, spreading perianth divisions and a stouter growth is the *N. Remopolensis* of Panizzi. On the islands at Cannes a form exists with a lobed crown, and near Antibes a whole colony of doubtful species [forms] grow in the meadows." It is not uncommon to see great handfuls of these beautiful and fragrant flowers preserved in water in the cottages of the peasants during the spring months in both France and Italy, just as our vernal species of crocus are gathered for the same purpose from the flat and oft-inundated meadows near Nottingham and Derby. One distinct form of this plant, *N. papyracea*, Gawl. (Jour. et Four. Ic., t. clxxix.), has pure white flowers, and is largely imported from Holland and Italy for forcing, under the name of "White Italian, or Paper White Narcissus."

Moggridge figures (see t. 70, Cont. Fl. Mentone) a subvariety of this plant under the name of *N. papyracea* β *incurvata*, having loose six-flowered umbels, and shorter ovate, or ovate oblong segments, all incurved, crown very short and entire. This plant flowers at Mentone in February, or fully two months later than the normal type. *N. Panizzianus* (Mogg. Cont., t. 71) is a small-flowered variety of this plant; *N. polyanthus* (Jour. et Four. Ic., clxxviii.), *N. virginea* (Ib., clxxvii.), and *N. micrantha* (Ib., clxxvi.), are nearly allied to *N. papyracea*, their flowers decreasing in size in the order named. The flowers of *N. micrantha* are scarcely half an inch across, and closely resemble those of the African *N. pachybolbus* (Ex. Sc. Alg., t. 47).

N. chrysanthus resembles *N. papyracea* in form and habit, but has bright golden-yellow flowers, and *N. Bertolonii* bears just the same relation to it as *N. Panizzianus* does to *N. papyracea*, having smaller flowers and shorter perianth lobes.

N. Italicus, again, resembles *N. papyracea* in the shape of its stellate flowers, but the perianth segments are either white or creamy yellow, with a lemon-coloured cup. This plant is said by Loudon (Encyl. Plts., pp. 241-2) to grow abundantly in the vicinity of Naples, whence it is imported for forcing.

Of the monstrous forms of this plant, the most remarkable is that so often met with as a spring-blooming decorative plant, under the name of the "Double Roman," which is largely imported both from Holland and the Continent for forcing purposes. Messrs. Veitch and Sons exhibited a fine double-flowered variety at one of the Royal Horticultural Society's meetings last year, having larger umbels, and the individual flowers were much larger and more finely formed than in the ordinary type. I was fortunate to obtain a sketch of this plant at the time, which is here reproduced. In habit the plant was very vigorous, and the wax-like glaucous leaves were fully three-fourths of an inch broad, and added much to the beauty of the plant. It is rather singular that in so variable a plant as *N. Tazetta* there are so few double-flowered forms.

The following are selected as seedling varieties of *N. Tazetta*, and are largely grown in Holland and some parts of the Continent for importation to this country. They are extremely easy to cultivate, either in pots of light rich earth, or in glasses of rain-water, like hyacinths. The bulbs arrive in September, and should

be potted directly, and the pots set close together under a north wall, and covered with two or three inches of either sand or coal ashes. When they have formed roots, which they do in a few weeks, remove them into heat for blooming as required.

Bathurst, primrose, with deep yellow cup, compact dwarf habit, very fine.
Bazelman major, white, with yellow cup, very sweet.
Czar de Muscovie, white and citron.
Double Roman, white, excellent for very early forcing.
Florence Nightingale, white, with orange cup, fine.
General Wyndham, white, with yellow cup, dwarf and compact habit, good truss.
Gloriosa, white, with orange cup, fine truss.
Golden Era, yellow, with orange cup, large truss, very fine.
Grand Monarque, white, with citron cup, large and handsome flower.
„ Primo Citronier, white and citron, fine.
„ Sultana, white, with yellow cup, fine large flower.
Her Majesty, white, with yellow cup, new and very fine.
Lord Canning, yellow, with light orange cup, fine.
Luna, white.
Newton, yellow, with orange cup, very fine truss.
Paper White, pure white, early, excellent for very early forcing.
Queen of the Netherlands, very fine white, with yellow cup, fine bold truss.
Soleil d'Or, yellow, with orange cup.
States General, creamy white, with yellow cup.
Sulpherine, primrose, with yellow cup, fine.

12. Narcissus gracilis, *Sabine* (*Graceful Daffodil, or Slender Narcissus*).—This is a very graceful plant, by no means common in gardens, although its grace, beauty, and grateful fragrance ought to make it a great favourite with amateur cultivators. The plant grows from a foot to nearly two feet in height, and generally flowers in May, or about the same time as the Poet's Narcissus, and bears from one to three flowered scapes, the latter being bright green, shining, and either cylindrical or slightly two-edged. In form and size the individual flowers are very similar to those of *N. poeticus*, but the whole flower is of a deep, clear, golden colour, changing to sulphur as the flower fades. The corona is cup-shaped or slightly campanulate, and a little plaited or crumpled around its margin. It is undoubtedly very nearly related to *N. poeticus*, and, as has already been suggested, may possibly be the result of a cross between the last-named species, or *N. biflorus* and one of the large flowered Tazettas. The leaves, however, are very different to those of any of the supposed parents, and closely resemble those of *N. odorus*, or *N. Jonquilla*, both of which are very fragrant, and have yellow flowers, and it is not an improbable idea

that it may have been raised between one of these and *N. poeticus* or its congener *N. biflorus*. The fact of its not being found in a wild state goes a long way in support of its being a garden hybrid. It is one of the most deliciously fragrant species in the whole group, and its flowers are valuable for cutting, as they endure for fully a fortnight in a vase of pure water.

N. tenuior (the slender Sulphur Narcissus) is a distinct and dwarf growing form of the last, and is well figured in the *Botanical Magazine* (Curtis) t. 373. The bulbs are about the size of thrushes' eggs, and of a glistening greyish colour, not dark brown as in most of the other species and varieties. This peculiarity is well represented in the above named plate. It bears three or four leaves to a bulb, these being from three to five inches in length, rather slender, and of a dark shining green colour. The scape rarely exceeds a foot in height, and is generally two-flowered. The individual flowers are rather smaller than those of *N. gracilis* proper, being rarely more than an inch to an inch and a quarter across. In colour they vary from lemon yellow to nearly pure white, with a lemon coloured cup. The figure in the *Botanical Magazine* was published in 1794, when the plant flowered in the garden of Mr. John Maddock at Walworth, who obtained bulbs of it from Holland under the name of "Narcissus flore Sulphureus Juncifolius," and Curtis adds that it "appears to have been long grown by the Dutch florists," and is "often double" in gardens. The last-mentioned double-flowered form is still one of the things hoped for amongst amateurs, and is probably lost to cultivation, unless like many other old-fashioned flowers it lingers still in some ancient country garden, unseen by our lynx-eyed modern florists. *N. gracilis* grows well in a warm richly-manured border, and when seen growing is easily distinguishable from *N. tenuior*, which is only about half the height of its congener, and blooms fully a month earlier under the same treatment. My specimens of *N. gracilis* were sent me by Mr. Harpur Crewe, and both white and lemon-tinted forms of the *N. tenuior* variety came from Mr. Barr's collection, in which I had an opportunity of seeing the plants in flower.

13. Narcissus intermedius, *Lois.* (*Intermediate Narcissus*).—This plant, according to Grenier and Godron in "Flore de France," is abundant on the hills near Bayonne and the Landes of Dax. Moggridge found the plant growing in moist, shady places near water

(Eastern Bay, Mentone), on a bank covered with the Common Reed (*Arundo donax*, L.), and the plant is well figured in the last-named author's "Contributions to the Flora of Mentone," t. 41. The plant grows from twelve to eighteen inches in height, having deep green subcylindrical leaves slightly ribbed or striate behind. The scapes are cylindrical 2–10-flowered, the flowers being on long slender stalks which gives the umbel a lax appearance. The cup is about one-third the length of the perianth lobes, and the whole flower is of a clear soft yellow colour. The plant may possibly be a natural hybrid; it is intermediate between *N. juncifolius* and *N. Tazetta*, though nearer the former than the latter, from which it is distinguishable mainly by having thick, subcylindrical leaves. The foliage is broader than that of *N. juncifolius*, and in this particular is identical with *N. odorus*, and the plant may be considered as the connecting link between *N. Tazetta* on the one hand, and *N. odorus* and *N. Jonquilla* on the other. Mr. Barr sent me fine specimens under the name of *N. intermedius* var. *bifrons*, and these specimens closely agreed with the figure in the *Botanical Magazine*, t. 1299. The plant is there stated to be a form of *N. orientalis* (*N. Tazetta*), with a yellow perianth and saffron cup, while the distinct foliage appears to have been overlooked in the letter-press, although represented by the artist. My specimens had bulbs as large as pigeons' eggs, covered with dark brown sheathing scales, and most of them bore but two slender recurved leaves, the scape being very stout, and from 2–6-flowered. The plant, when in bloom, resembles *N. Tazetta* too closely to become popular; still its flowers are fragrant, and borne profusely—qualities which ought to gain it a place in the most select collection. The plant generally blooms in April and May.

14. Narcissus pachybolbos, *Durieu* (*The Great, or Thick Bulbed Narcissus*).—This is another Algerian plant recently introduced into our collections. There is an excellent plate in Durieu (Exot. Algeria, t. 47, fig. 1), which represents the plant as of very stout habit, about a foot in height, the bulb being fully two inches in diameter, and proportionately much larger than the other parts of the plant. The leaves are like those of *N. Tazetta*, but only about six inches long, scarcely half an inch broad, and of a glaucous colour. The erect scape is short and stout, bearing ten to fifteen white flowers, scarcely more than half an inch across. The individual

flowers closely resemble those of *N. Tazetta* var. *micrantha*, as figured by Jordan and Fourreau in "Icones Flore Europeæ," t. clxxvi.; indeed, so near is the resemblance that I am inclined to consider this plant as but an African form of *N. Tazetta*, having a more sturdy habit of growth and very glaucous foliage. As a variety it is well worth cultivating in our gardens, and Mr. Giles Munby has succeeded in importing this plant, together with fresh growing bulbs of the charming *N. monophyllus*. The figure above quoted, and from which my own plate is prepared, represents such a stunted-looking plant that I doubt much whether it is not a white flowered form of *N. Tazetta*, the natural growth of which has, by some accidental occurrence, been in part arrested.

15. Narcissus Jonquilla, *Linn* (*The Jonquil, or Fragrant Rush-leaved Narcissus*).—One of the commonest plants in the whole group, and a general favourite in most gardens where it is either grown as a hardy spring flowering bulb, or forced for the sake of its brilliant golden yellow and sweetly perfumed flowers. Bulbs of both the single and double varieties are annually imported from Holland for the last-named purpose in large quantities. The plant varies much in habit, some small flowered forms being little over nine inches in height, while others are fully three times that length, and bear flowers nearly as much in diameter as those of *N. odorus*, from which, however, the present plant is readily known by its narrower segments and flatter crown. It has more frequently been confounded with the pretty little *N. juncifolius*, but, as stated by Grenier and Godron in the "Flore de France," p. 258, it is readily distinguished by its crown being much smaller in proportion to the diameter of the flowers, and its leaves are much longer and broader. The segments of the perianth are also narrower, and there is no comparison between the habit of the two plants when side by side. The tall scapes are 2–7-flowered, the buds opening in succession. The individual flowers vary greatly in size on the same scape, those that open first are much larger than the others, and are borne on slender pedicels fully three inches in length. In some cases the latest buds are nearly sessile in the spathe, and fail to develop into perfect flowers. Parkinson alludes to this plant in his "Paradisus," p. 94, where he calls it "Narcissus juncifolius luteis vulgaris major." "The ordinary junquilia or rush daffodil." "The ordinary Rush Daffodil hath foure or five long greene round leaves like unto Rushes; whereof it tooke the

name; among these leaves riseth up the stalke round and greene a foot and a halfe high, very often bearing at the top three or four flowers, all yellow, but much smaller than the last [*N. odorus*], and so is the cup also. The seede is small and blacke, inclosed in small covered heads." Parkinson's figure (p. 93, fig. 5,) represents a 7-flowered form with stellate flowers about half an inch across. At p. 93, fig. 8, he also gives an excellent representation of the double flowered form.

The same author also describes a form of this plant, at p. 94, as follows :—"Narcissus juncifolius luteis albicaulibus lineis distinctis." "The Yellow Junquilia, or Rush Daffodil, with white lines." "This rush daffodil," he says, "hath round greene and long leaves, like unto the ordinary Rush Daffodil, with a stalke bearing two or three yellow flowers, having leaves somewhat round at the point or end, with a line or strake of white in the middle of every one of them. The cup is short and crowne fashion, a little crumpled about the brims; the seede, roote, or anything else differeth not." This form does not now exist in our collections, and may, like many other of the plants distinguished either as species or varieties by the older botanists, have been but a casual sport or accidental variation from the normal form.

16. Narcissus biflorus, *Curtis* (*Twin-flowered Narcissus, or Primrose Peerless Daffodil*).—Parkinson gives a characteristic description of this plant, which was evidently common in his time, both as a naturalized plant, and also in gardens. He says, "This Daffodil is so common in every country garden, almost throughout England, that I doubt I shall but spend my time in vain to describe that which is so well known, yet for their sakes that know it not I will set down the description of it in this manner. It hath long limber and broad leaves of a greyish green colour, among which riseth up a stalke bearing at the top out of a skinnie husk sometimes but one flower, but most commonly two flowers, and seldom three or more, but larger for the most part than any that bear many flowers upon a stalk of a pale whitish cream colour, somewhat neare into a pale Primrose (which has caused our country gentlewomen I think to entitle it Primrose Peerless) with a small round flat crown rather than a cup in the middle, of a pale yellow colour, with some pale chives standing therein, being of a sweet but stuffing sent; the root is tolerably large, increasing more than a better plant," and he

adds, that it "is thought to grow wild in England, but I could never hear of his natural place. I am sure it is plentiful enough in all country gardens, so that we scarce give it a place in our more curious parkes." The plant may be described as *N. poeticus*, with two flowers on a scape, and a yellow cup minus the purple rim. It is a curious fact that the anthers of this plant seldom develop perfect pollen grains, and its ovules are very often abortive, still it is capable of being made a seed-bearing parent when fertilized with pollen taken from other species.

The plant grows vigorously in almost any soil and situation, rapidly multiplying itself by offsets either in a semi-wild or cultivated state. It abounds in sandy fields in Herts, Kent, Devon, and other southern counties, and is abundantly naturalized in the vicinity of Dublin. It is sufficiently showy to merit a place in every herbaceous border, and well-developed bulbs give a good supply of early spring flowers when forced, as recommended in the case of the Poet's Narcissus. Herbert alludes to four forms at p. 317 of his "Amaryllidaceæ." His var. 1 *sterilis* (*biflorus, Bot. Mag.* 6, 197) is "2-flowered, without pollen or ovules in our gardens, perhaps from having been raised by offsets three centuries or more without renovation by seed," another 2–4-flowered form (*triflorus*) from the South of France, he describes as bearing perfect seeds, the flowers being rather smaller and the white clearer.

17. Narcissus poeticus, *Linn.* (*Poet's Narcissus, Pheasant's Eye, or Purple-ringed Daffodil*).—This variable plant is at the same time one of the most generally cultivated and most beautiful of all the species in the whole group. In Dr. Alfred Smee's charming work entitled "My Garden," at page 214 he says, "When the glorious *Narcissus poeticus* comes into flower at the end of May, we know that summer is at hand. Whilst it lasts it is the glory of the garden, and many roots should be grown. Near the Lago Maggiore I saw a field literally covered with this Narcissus, and a great sight it was. It multiplies very fast, and forms large patches if the gardener does not tidy up the borders in winter, and ruthlessly destroy the bulbs."

Although a reputed native of this country, it is perhaps best to consider it as a naturalized plant. It is found in a semi-wild condition at Wood Bastwick, and other parts of Norfolk and Kent, and is abundantly naturalized in the vicinity of Cork, while in Scotland

it is very rarely met with except in cultivation. It is common as a wild plant in the South of Europe. This species is generally recognised as the Narcissus of the Greek writers, and it is mentioned by Dioscorides as "the empurpled Narcissus."

Pro molli violâ, pro purpureo Narcisso.

In one passage of the fifth pastoral, Virgil also alludes to an empurpled Narcissus, which is undoubtedly intended as an allusion to the purple-rimmed corona of the present species. It varies much in the size of its flowers and time of blooming; but all the forms, however diverse, are readily known by the purple, or saffron-tinted rim to the flattened cup. Some varieties have very slender segments, and the cup is very slightly marked with purple, while in others it becomes a very conspicuous feature and forms a pleasing contrast to the snowy whiteness of the more or less reflexed segments of the perianth. One fine early-flowered form, sent me by Mr. Barr in April, 1874, had the whole cup of a brilliant orange colour. The plant varies in height from about six inches to nearly three times that length, and there is also a marked difference in the breadth of the glaucous, erect or recurved leaves. As a rule this species bears one-flowered scapes, while more rarely two, three, and even four flowers are produced, and as shown by Dr. Henon (quoted by Mr. Baker, p. 84) this plant passes through *N. biflorus* to *N. Tazetta*, even in a wild state. This is a most important and interesting fact, especially when we remember that in a state of cultivation hybrids have been raised between *N. poeticus* and *N. Pseudo-Narcissus*, the progeny closely resembling *N. incomparabilis* in every way. Instances like these serve to show us the immense value of artificial hybridization as a means of determining the limits of species.

This is a popular border flower, and being more robust than many of its congenors, it luxuriates and flowers copiously in almost any soil or situation. In the cottage gardens of Cheshire this plant is often grown, and is there called "Sweet Nancy." Its pearly flowers are deliciously perfumed, and are invaluable during the spring months as domestic ornaments arranged in bouquets or vases along with deeper coloured and more brilliantly tinted flowers. It does not appear to be generally known that the bulbs of this plant bear forcing nearly as well as those of the Hyacinth if taken up in the autumn and potted in a sandy compost of loam and leaf mould. When

potted they should be placed in a cold pit or frame, and covered with either sand or ashes until the leaves appear, when they can be removed into a gentle heat to forward them in succession as may be most convenient. The forcing must be very gradual or the bulbs will not succeed well. It is a noticeable fact that the bulbs yield a better display of flowers the second year they are forced, and by adopting this system of culture the blooming season of this favourite hardy bulb is agreeably prolonged. This plant frequently bears double flowers, and the best double forms very closely resemble those of *Gardenia florida*, being indeed but little inferior to that choice exotic either in their purity of colour or exquisite odour.

Herbert names and describes ten forms of this species, the most distinct being *N. poeticus* v. *verbanensis*, a miniature-flowered plant blooming in May. The last-mentioned author describes it as "agreeing with *poeticus*, but smaller in all its parts with very narrow linear leaves and reflexed segments, tinged with yellow at the base," and adds that it was "brought to Bolton Percy, in Yorkshire, a few years ago by Mrs. Robert Markham, who found it growing in a pasture about a mile from Baveno, near Lago Maggiore on the side of the road to Milan. It is remarkable that this plant does not seem to increase by offsets in its native situation, the bulbs being found single and scattered about the pasture, instead of growing in tufts like most others." This pretty little form has been exhibited by Mr. Barr at South Kensington, but is very rare in gardens. Herbert's figure of this plant given in his "Amaryllidaceæ" is a good one, and is, in part, copied on Plate XLIII. of this work.

18. Narcissus viridiflorus, *Schousb.* (*Green-flowered Autumnal Daffodil*).—This peculiar species is not now in cultivation, and although known since the time of Elizabeth has never been common in our gardens. John Parkinson was the first to notice the plant in his "Paradisus" under the name of "*Narcissus juncifolius autumnalis flore viridis.*" "The Autumn Rush Daffodil with a greene flower," together with the following quaint although characteristic description. "This strange Rush Daffodil (I call it strange not onely because it differeth from all others of this kinde, but also because there are but few in these parts that have had it, and fewer that do still enjoy it, in that it is perished withall that had it) hath but one onely leaf, very long round, and greene, in all that ever I

saw growing, which beareth no flower while that leafe is fresh, and to bee seene; but afterwards the stalk riseth up being like unto the former greene leafe round naked, and green up to the toppe, where two or three flowers breake forth out of a small thin skinne, euvery one consisting of six small and narrow greene leaves, very sharpe pointed at the end, and as it were ending in a small prick or thorne; in the middle whereof is a small round cup or rather crowne, of the same colour with the leaves and stalke, which flower smelleth very sweete, somewhat like unto the rest of the Rush Daffodils; this showeth not his flower vntill October, and the frosts quickly following after their flowering cause them soone to perish." It was next alluded to by Schousboe, a Danish botanist, who discovered it growing in tolerable abundance on the coast of Barbary, also between Gibraltar and St. Roque. It is figured in the *Botanical Magazine*, vol. xli. t. 1687, from a specimen received from Spain which flowered during the summer of 1815 in an amateur's garden at South Lambeth. This figure shows "the little prick or thorne" alluded to above, which is a process more or less developed at the tip of the outer segments of nearly all the species, and is represented in our plate. It appears all the more conspicuous in our present plant on account of the extreme slenderness of the segments. Parkinson's figure in his "Paradisus" t. 93, fig. 6, represents a three-flowered scape of slender stellate flowers an inch across. The segments spread horizontally and are not reflexed as in the *Bot. Mag.* plate above quoted, while the margin of the cup is represented as entire instead of 6-lobed, whence Haworth's name *Chloraster integer*.

19. Narcissus elegans, *Spach* (*The Slender or Graceful Autumnal Daffodil*).—This plant is not likely to attract the attention of the professional florist who, although constantly on the look out for novelties, finds it more remunerative to limit his researches to the showy species, leaving these unassuming little gems to the enthusiastic *jardinier-botaniste*, who happily has ever a hearty welcome and an inch or two of genial soil for plants like the present. The plant now under consideration differs from the following in having much more slender lanceolate acuminate divisions, and the scapes are invariably synchronous with the slender bright green leaves. The scapes are also very frequently many flowered. Herbert in his "Amaryllidaceæ," t. 41, fig. 27, figures a single flower copied from a many flowered umbel in Desf. Fl. Atl. This flower has longer

segments than the specimens in Herb. J. Gay, at Kew, from which my figure is prepared, but doubtless the plant is very variable in this respect. The plant is a native of Sicily and probably of Sardinia, it is also found in Italy. It does not produce its flowers until the autumn, generally in September or October.

20. Narcissus serotinus, *Linn.* (*Tangiers or late-flowering Autumn Narcissus*).—This curious species much resembles the last in general habit but differs in its slender scapes being almost always one flowered, although rarely two flowers are produced, and it is so figured by Herbert in his "Amaryllidaceæ." The slender leaves are as long as the scapes, but are not produced until after the latter have died down, and no doubt this peculiarity will render the plant difficult of cultivation in this country unless it is sheltered from the first frosts of the waning year. The divisions of the flower are acute and broader than those of the last-named with a tendency to become reflexed. It is a graceful little plant and ought to be seen in cultivation. It is a native of the South of Europe, Africa (Tangiers and the Barbary States) and the Holy Land.

21. Narcissus Broussonetii, *Lagasca* (*Broussonet's Narcissus*). —This unique species is not at present in cultivation although somewhat recently flowers were gathered in Marocco by Dr. Leared. The specimen found its way to the Royal Herbarium, Kew, and consists of an eight flowered inflorescence from which our Plate was prepared. It differs from all the other members of this group in having the crown reduced to a mere rim, in the flower being sub-campanulate, or somewhat bell-shaped in form, and in having the filaments more fully developed than is generally the case. The flowers are white, borne on a scape a foot or more in height. In the dried state they are membranous, almost translucent in texture, the segments being beautifully netted or veined, and the kidney shaped versatile anthers contain a copious supply of pollen. It is possible the plant may be the result of a cross between Narcissus and some other Amaryllidaceous plant belonging to a different genus. In a dried state the inflorescence bears a marked resemblance to that of *Nerine pudica* (*Bot. Mag.*, t. 5901) and there is also a great similarity in the bulbs and foliage.

22. Narcissus canariensis (*The Canary Islands Narcissus*).— This graceful plant is a native of the Canaries, as appears by its specific name, and is not as yet in cultivation in this country. Mr. Baker kindly drew my attention to a solitary specimen in the Royal

Herbarium, Kew, together with a tracing from an original sketch made by Herbert. My figure is prepared from these materials. It is without doubt a slender form of *N. Tazetta*, and, so far as I have yet seen, it is the smallest flowered form in the whole group, the dried flowers being barely half an inch across. The specimen in the Hookerian Herbarium at Kew is about eighteen inches in height, the leaves being very narrow, scarcely more than one-third of an inch in breadth. The scape is slender and about equal to the foliage, bearing a 7-flowered umbel. A manuscript note attached to the specimen mentions the fact that it is "near *dubius* but crown shorter," and it may be considered as the connecting link between that species (*N. dubius*) and the small white flowered *N. Tazettas*. The cup or rather crown is very much reduced, being scarcely more than a line long; or about one-third the length of the ovate lance shaped segments by about twice that in diameter. The flower tube is extremely slender and about three quarters of an inch in length, having a peculiar enlargement or swelling just where it joins the base of the stellate limb. It is the *Hermione canariensis* of Herbert and the *Narcissus albus* of Desf. and well deserves culture as one of the most elegant forms of a very beautiful group.

HAWORTH'S ARRANGEMENT OF NARCISSUS.

The following is a list of Haworth's genera into which he divided the Narcissi in his monograph :—

1. *Corbularia* (corbula=a little basket), ten forms, *N. Bulbocodium* and its varieties being examples:—*Bulbocodium* (small entire crowned), *cantabrica* (lesser white), *albicans* (larger white), *tenuifolia* (slender leaved), *aurea* (shorter crown), *obesa* (inflated), *lobulata* (lesser hooped petticoat), *conspicua* (the showy), *serotina* (large, late, twisted leaved), *gigas* (the largest).

2. *Ajax* (the brave Greek in the Trojan war). These are the true Daffodils, *N. Pseudo-Narcissus* and its varieties. Twenty-four forms are described.

3. *Oileus* (poet's lesser Ajax) the clipt trunk forms of the last-named species as *abscissus*, *hexangularis*, *minor*, *albus*, *pumilus*, five forms, none of which he had seen. I have seen one clipt trunk form, which is figured, and consider it merely an accidental variation.

4. *Assaracus* (brother of Ganymedes). This genus included the

two forms of the true *N. calathinus* called by Haworth *A. capax* and *A. reflexus.*

5. *Illus* (another brother of Ganymedes) including *N. triandrus* and its variety *cernuus.*

6. *Ganymedes* (cup-bearer to the gods) includes five forms of *N. triandrus;* as *pulchellus, concolor, striatulus, nutans* and *albus,* the latter being *N. dubius.*

7. *Diomedes* (a valiant Greek at the siege of Troy), three forms, *minor* (*N. Macleaii*), *major* (*N. Sabini*), and *Parkinsoni,* which he never saw but gives as reference, *Narcissus albus oblonga calyce.* Park. Parad. t. 71, f. 7.

8. *Tros* (the father of Ganymedes) included *N. montanus* (of the Bot. Reg., vol. ii. pl. 123), and its form *galanthifolius.*

9. *Queltia* (Nicholas Le Quelt), seven forms of *N. incomparabilis;* as *aurantia* (orange rimmed), *aurantia plena; luteo-aurantia* (Butter and Eggs), *Gouani* (lobed orange rim), *incomparabilis, concolor* (self-coloured), *semipartita* (cloven cupped), *alba* (great white), *alba-plena nivea-aurantia* (orange Phœnix), *nivea* (lesser white).

10. *Schizanthes* (schizo, to cut; anthos, a flower, the crown being gashed), one form of *N. Tazetta,* known as *Schizanthes orientalis* of gardens (see *Bot. Mag.* t. 948).

11. *Philogyne* (phileo, to love; gyne, a woman); this included ten or eleven forms of *N. odorus* (great 6-lobed):—*Campernelli* (late great 6-lobed), *rugulosa* (great wrinkled cup), *interjecta* (great curled cup), *Curtisii* (Curtis's), *calathina* (greatest cupped), *triloba* (lesser 3-lobed), *minor* (lesser), *heminalis* (narrow-cupped), and *heminalis-pluriflora,* a larger form.

12. *Jonquilla* (juncus, a rush, the leaves resembling rushes in form and colour). This name included four varieties of the common jonquil, *N. Jonquilla-major* (great), *media* (middle), *minor* (lesser), and *parvicorona* (little crowned).

13. *Chloraster* (chloros, green; aster, a star, flowers green), includes *N. viridiflorus,* as *C. fissus* (cloven cupped), with reference to *Bot. Mag.* t. 1687, and *C. integer* (entire cupped), on the authority of Parkinson's Paradisus, p. 93, fig. 6.

14. *Hermione* (daughter of Menelaus and Helena); this included the innumerable forms into which the ubiquitous *N. Tazetta* is known to vary, also *N. dubius, N. elegans, N. serotina,* and *N.* (*obliteratus*) *Broussonetii.* Fifty-four species and varieties are included under this generic name in his "monograph."

15. *Helena* (the daughter of Leda and mother of Hermione); this section included the yellow-flowered *N. gracilis*, and its sulphur-coloured variety, *tenuior* (slender straw-coloured), *planicorona* (slender flat-crowned), the last-named is a flat-cupped form of *N. juncifolius*, *purpureo-cincta* (dwarf purple rimmed), a small form of *N. poeticus*.

16. *Narcissus* (son of Cephissus and Liriope), included all the forms of the true *Narcissus poeticus* or Pheasant's-eye Narcissus, as *N. poetarum* (saffron cupped), *ornatus* (flat-crowned saffron-rim), *angustifolius* (narrow-leaved saffron rim), *spathulatus* (lesser saffron rim), *albus* (slightly saffron-rimmed), *dianthos* (2-flowered saffron-rim), *triflorus* (3-flowered), *biflorus* (cream-coloured), *recurvus* (drooping leaved saffron rim), *poeticus* (middle-sized May), *patellaris* (large broad May), *stellaris* (long petalled saffron rim).

REVIEW OF THE GENUS NARCISSUS.

By J. G. BAKER, F.L.S.

OF THE ROYAL HERBARIUM, KEW.

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REVISED BY AUTHOR AND BROUGHT UP TO PRESENT DATE.

In view of the reviving interest in this beautiful genus, I propose to devote a little space to a review of the species and principal varieties, pointing out their characteristic distinctions as well as the materials at my command will allow, and endeavouring to group them so that my remarks may serve the reader as a guide to the naming and arranging of his specimens. In the last generation, at the time when the public interest in Narcissi reached its highest point, Mr. Haworth and the Hon. and Rev. W. Herbert studied the genus from living plants in English gardens in a very careful and elaborate manner, and both published the result of their investigations. In Haworth's monograph, which was printed in 1831, and published as a supplement to Sweet's "Flower Garden," in the year 1831 (vol. i. second series), nearly 150 so-called species are enumerated and characterized; but what Haworth understood by a species, is what most botanists mean when they speak of a slight garden variety; and not only have a large proportion of his plants never been identified in the wild state, but a considerable number of them he had never seen himself, but had taken up from the rude

woodcuts of the pre-Linnæan herbalists. These 150 species he classified under 16 genera.

The Dean of Manchester, who for many years made a special study of Amaryllidaceæ, performed a very useful service in revising Haworth's work, which he did by reducing his sixteen genera to six, rejecting such of his types as were known from figures only, and grouping the rest into combinations of a higher order of value; but he, too, here, as in the other genera of the order, took a different view of what constitutes a species to that which it is possible for any writer who deals with wild plants to adopt, and in consequence often founded species upon a basis of character so narrow as to make it quite impossible for those who use his book to apply his definitions in practice. The principal writers upon the genus on the Continent have followed our two English monographers almost implicitly both as regards the arrangement and characterization of the plants, Spach, and Roemer and Schultes treading in the footsteps of Haworth; and Kunth, in his "Enumeratio," which is the book generally used both at home and abroad for naming and classifying *Amaryllidaceæ* and *Liliaceæ*, following close upon the track of Herbert. My own view is that the range in structure which the plants show, taking in view the gradual manner in which the extremes are connected by intermediate links, is not too great for them to be associated together in a single genus, as Linnæus planned; and I believe that the number of what may be fairly called species, as the term is understood by the majority of botanists, which it is possible to characterize as clearly as species ought to be characterized, and which are known definitely in a wild state, is not much over twenty. In the present paper I propose to pass these under review, giving for each as good distinctive characters as can be furnished, and enumerating under each its principal varieties and synonyms, with a reference to the figures where the typical plants and varieties will be found represented.

At the outset it will be better to clear the way by a few general remarks on the parts of the plant which vary sufficiently in the different species to furnish characters by which they may be known from one another; and for this purpose I will pass the parts of the plant rapidly under review.

Bulbs.—The bulbs of the different kinds vary in size very much but in all are quite uniform in general character.

Leaf.—There are two well-marked types of leaf with intermediate gradations, one kind, rush-like in shape, and nearly or quite round in horizontal section; the other, though rather thicker in the middle than towards the edge, yet nearly flat in the upper half, but becoming convex on the back and slightly concave on the face as it descends to clasp the base of the scape. We have good examples of the rush-like type of leaf in *N. juncifolius* and *Jonquilla*, and of the nearly flat kind, attaining a breadth of half-an-inch or more, in *N. Tazetta* and *Pseudo-Narcissus*. In *N. odorus* and *intermedius* we have a half-cylindrical leaf with a deep channel down the face, and in several kinds a less convex leaf, two or three lines broad. The rush-like and semi-cylindrical leaves are always a bright glossy green; those that are nearly flat are usually more or less covered with a glaucous bloom. In all except one of the autumn-flowering species, the leaves are contemporary with the flowers.

Scape.—In most of the species the scape is more or less compressed, with a raised line on the two opposite edges (ancipitous); in a few it is nearly or quite round in horizontal section (terete). In *N. Pseudo-narcissus, Bulbocodium, poeticus* and *incomparabilis*, it is essentially single-flowered; but generally there is a tendency to produce more than one flower, and in some of the varieties of *N. Tazetta* we have as many as a dozen or even twenty. The spathe has never more than a single valve. Sometimes the flower is nearly sessile in the spathe, but more usually the pedicels are nearly or quite as long as the spathe.

Tube of the Perianth.—The tube is generally as long or rather longer than the divisions of the perianth. In all but two species it is a slender cylinder, slightly dilated at the throat, or a funnel with a narrow neck; but in *N. Pseudo-narcissus* and *Bulbocodium* it is shaped like a reversed cone.

Divisions of the Perianth.—In *N. Broussonetii*, and the two species just mentioned, the divisions of the perianth form permanently an acute angle with the crown. In *N. calathinus* and *triandrus* they become decidedly reflexed when the flower expands; but in the majority of the species they spread out from the base of the crown horizontally, being usually broad enough to wrap over one another; but in the three autumn-flowering species very narrow, and narrowed gradually from the base to a sharp point.

Corona.—The crown in the centre of the flower varies very much,

and furnishes some of the best marks which we can get for characterizing the species. Beginning with *N. Broussonetii*, it shows itself as a layer almost entirely confluent with the upper part of the tube. We get it in the next stage of development in the autumn-flowering species, in which it is an erect rim scarcely over half a line high. In *N. poeticus* and *biflorus* it is a similar but rather deeper rim, with a very much crisped scariose edge. In the *N. Tazetta* group it is a cup, from a third to a quarter as long as the divisions of the perianth. In *N. incomparabilis* and *odorus* it is an erect cylinder, half an inch deep, and quite as broad as deep, whilst in *N. Pseudo-narcissus* and *Bulbocodium* we have it either as a reversed cone or a cylinder with a spreading mouth, which is quite as long, or rather longer than the divisions of the perianth.

Stamens.—Usually the length of the filaments is in proportion to that of the corona. In *N. Tazetta*, *poeticus*, and most of the others with a short crown, the stamens are nearly or quite sessile in two contiguous rows near the throat of the tube; but we have a marked exception to this in *N. Broussonetii*, which has filaments one and a half to two lines long. In *N. odorus*, *incomparabilis*, *montanus*, and *Macleaii*, the filaments about equal the anthers. In *N. calathinus* and *triandrus* they are two or three times as long as the anthers, the lower three issuing from near the base, and the upper three from near the top of the tube. In *N. Pseudo-narcissus* they all spring from one level low down in the tube, and are quite straight and more than half-an-inch long. In *N. Bulbocodium* they spring from near the base of the tube, and reach nearly or quite to the mouth of the crown, and are all distinctly upcurved toward the point.

Style.—Herbert attaches great importance to the length of the style in characterizing species and varieties, but it certainly is not at all safe to do so. In general terms I may say that the stigma is on a level with the upper row of stamens.

Colour of the Flower.—In nearly all the species there is considerable variation here. The corona is more constant in colour than the rest of the flower, and generally deeper in hue. From snow-white and milk-white, we pass gradually to a bright yellow, getting no other bright shade of colour except green in the limb of one rare, little-known species, and bright red in the crown of *N. poeticus*.

Time of Flowering.—A variety of *Tazetta*, said to be naturalized in Cornwall, flowers in February or even in the latter part of January,

and the common garden Narcissi early in March, finishing before the end of the month. Next in order come *N. incomparabilis, odorus, radiiflorus, Macleaii*, and the early varieties of *Tazetta*, which are in full flower by the end of March, and continue through the early part of April. A third set, *N. poeticus, biflorus, Jonquilla, juncifolius, Bulbocodium*, and the late varieties of *Tazetta*, come out in April, and some of them continue into May; and three species—*N. viridiflorus, elegans*, and *serotinus*—flower in September.

On the whole the character which appears to be most readily applicable for dividing the species into groups, is that furnished by the proportion which the crown bears to the divisions of the flower; and I intend therefore, in enumerating the species, to classify them as follows:—

Group 1. *Magnicoronatæ*.—Crown as long, or rather longer, than the divisions of the perianth.

Group 2. *Mediocoronatæ*.—Crown half as long as the divisions of the perianth (in one or two exceptional cases three-quarters as long).

Group 3. *Parvicoronatæ*.—Crown less than half as long as the divisions of the perianth.

GROUP I. MAGNICORONATÆ.—Crown as long or rather longer than the divisions of the perianth.

Of the Narcissi which have the crown in the middle of the flower as long as the divisions of the flower, there are only three well-marked species, each of which corresponds to a genus of Haworth's, two of which are well known in cultivation, but the third, which is very rare in a wild state, is now, we fear, lost from our gardens. They may be distinguished from each other as follows, viz.:—

Tube inversely conical, varying from as long to twice as long as broad, with the stamens from the bottom; divisions of the flower more or less distinctly ascending.	
Filaments and style curved; divisions of the perianth linear-lanceolate, a line to an eighth of an inch broad at the base	1. BULBOCODIUM (Genus Corbularia, Haworth).
Filaments and style straight; divisions of the perianth oblong-lanceolate, 5—6 lines broad at the base .	2. PSEUDO-NARCISSUS (Genus Ajax, Haworth).
Tube cylindrical, rather widened at the top, five or six times as long as broad; divisions of the perianth distinctly reflexed	3. CALATHINUS (Genus Assaracus, Haworth).

The following is a detailed description of the typical form of each, with its principal varieties and their synonyms:—

I. N. Bulbocodium (Linn. "Sp. Plant." p. 417).—Bulb ovoid, ½–¾ inch thick; leaves two or three to a scape, subterete, 4–8 inches long, not more than a line broad, bright green, generally rather shorter than the scape. Scape 4–8 inches high, slender, terete; flowering about London late in April or early in May, and never bearing more than a single flower, which is either ascending or horizontal, not drooping, with a pedicel within the spathe 3–9 lines long. Perianth gradually widened from the ovary to the mouth of the crown, 18–21 lines deep, exclusive of the ovary; the whole flower bright yellow, the lower part and the divisions of the limb rather deeper than the rest, the tube and crown very nearly equal in depth, the latter scarcely at all crisped, and very indistinctly toothed at the throat; the divisions of the limb ascending, linear, a line to an eighth of an inch broad at the base, narrowed gradually from the base to an acute point. Stamens sub-biseriate from the base of the tube, the filaments filiform, reaching nearly or quite to the throat of the crown and decidedly upcurved, like the style, which is often slightly protruded. Anthers linear, 2–2½ lines long. A native of Spain, Portugal, the opposite coast of Africa, and the south-west of France as far north as Bordeaux.

This, the "hoop petticoat," was divided into "species" by Herbert as follows, and we give references to the figures and Haworth's and some other synonyms; but we fear that, even taking the plants as slight varieties, they are barely distinguishable:—

1. *C. Bulbocodium*, Herb. "Amar." p. 297.—Size as described above; corona slightly undulated, entire or slightly lobed; style shorter than the corona. Redouté, "Lil." t. 24; *C. lobulata* and *serotina*, Haworth, "Mon." p. 1—the latter figured Bot. Mag. t. 88; Sweet, "Flow. Gard." ser. 2, t. 164.

2. *C. conspicua*, Herb. "Amar." p. 298.—A robust form, with a slightly repand corona and exserted style. *N. conspicuus*, Sweet, "Flow. Gard." ser. 2, t. 326; *N. aureus*, DC. in Red. "Lil." vol. viii.; *C. gigas*, *conspicua*, and *aurea*, Haworth.

3. *C. tenuifolia*, Herb. "Amar." p. 298.—A slender form, with erect shining leaves, a distinctly exserted style, and a distinctly lobed corona. *N. tenuifolius*, Salisb. "Prodr." p. 222, Red. "Lil." t. 486; Sweet, "Flow. Gard." t. 114; *C. tenuifolia* and *Bulbocodium*, Haw.

4. *C. obesa*, Herb. "Amar." p. 298.—More slender than the

type; leaves drooping; corona entire, inflated; style exserted. *N. obesus*, Salisb. "Prodr." p. 222; *N. inflatus*, Haw. "Linn. Trans." v. p. 243.

The following are more striking varieties than any of the above:—

5. *N. nivalis*, Graells, "Indic. Pl. Nouv." p. 9.—Leaves 2–3, scape not more than 3–4 inches high; perianth not more than 8–9 lines long above the very shortly-stalked ovary, the divisions of the limb as long as the faintly crenate corona; the style, and usually both sets of stamens, exserted. Spain. Bourgeau, n. 2280. From this *C. hedræantha*, Webb and Held in "Blanc. Exsic." No. 220, differs only by its sessile ovary.

6. *C. Graellsii*, Webb in "Bourg. Exsic." n. 2281.—Leaves 2–3; scape 4–6 inches long; perianth an inch long above the ovary, the divisions subpatent, with a brown keel, which is decurrent to the base of the tube; corona subentire; style and longer stamens exserted. Spain.

7. *C. monophylla*, Durieu in Duchartre "Rev. Bot." 1847, p. 1847; "Expl. Alg.," t. 47, *N. Bulbocodium*, var. *monophylla*, Bot. Mag. t. 5831; *N. Clusii*, Dunal. "Mem. Acad. Sc. Mont." p. 9, t. 6.—Leaf very slender (one-third of a line broad) usually solitary, ovary nearly sessile in the spathe; perianth nearly white, as is also the crenulate corona, 15–18 lines long above the ovary; the style exserted. Algeria. Balansa, n. 235. This has been distributed plentifully lately by Mr. Munby, who, Gard. Chron., 1874, p. 307, identifies it with *C. cantabrica*, Haw., a little-known Pyrenean form.

II. N. Pseudo-Narcissus (Linn. "Sp. Plant." p. 414).—Bulb ovoid, an inch or an inch and a half thick; leaves five or six to a scape, glaucous, erect, flattish upwards, equalling, or rather shorter than the scape at the time of flowering, five or six lines broad. Scape about a foot high, with two prominent edges, flowering in the middle of March, before any of the other species. Flowers always solitary, nearly sessile, or with a very short pedicel within the spathe. Flower 18–20 lines long above the ovary, the obconical tube about half an inch deep, the divisions of the limb more or less ascending, sulphur-yellow, paler than the crown, oblong-lanceolate, 9–10 lines long, 5–6 lines broad at the base, the outer ones rather blunter than the others, the crown just equalling the divisions, deeper and more orange-yellow than the divisions, the mouth about an inch across, slightly plicate and incisocrenate; filaments uniseriate from the base

of the tube, 7–8 lines long, flattened downwards, straight, the anthers linear, four lines long. Style above an inch long, straight, slightly exceeding the anthers. Extending as a wild plant from Sweden and England, to Portugal, Spain, Italy, and Transylvania.

Of this, the Daffodil, there are five well-marked varieties, which were known to, and described and named by, Linnæus; and which keep up their characters well enough under cultivation to stand as species for all garden purposes, as follows:—

1. *Pseudo-Narcissus*, Linn., the ordinary average form of which we have described above. Reich. "Germ." t. 816. *Ajax Pseudo-Narcissus* of Herbert and Kunth; *A. Pseudo-Narcissus*, Haworth ("Eng. Bot." t. 17); *A. serratus*, Haw.; *A. nobilis*, Haw. (Red. "Lil." t. 158); *A. Telamonius*, Haw. (Herb. "Amar." t. 38, fig. 7); *A. lobularis*, Haw. (a form with a more spreading mouth to the crown, with six regular rounded lobes a quarter of an inch deep); *A. rugilobus* and *cambricus*, Haw. (near the last); *A. muticus*, J. Gay, "Bull. Bot. Soc. France," vii. p. 308 (divisions of the limb longer in proportion to the tube).

2. *major*, Linn. "Sp. Plant." p. 415.—Larger in all its parts than the last; the leaves 6–8 lines broad, the flower 2–2¼ inches long above the ovary; the divisions of the limb twice as long as the broadly obconical tube, the same colour as the crown, which slightly exceeds them, and spreads more at the throat (in an extreme specimen that lies before us whilst we are writing, an inch and a-half broad).—Reich. "Germ." t. 817, Curt. Bot. Mag. t. 51; *A. luteus*, Herb. and Kunth; *A. maximus*, Haw. (*N. maximus*, Don, Sweet, "Brit. Fl. Gard." ser. 2, t. 286); *N. grandiflorus*, Salisb. "Prodr." p. 221; *A. propinquus*, Haw. (Bot. Mag. t. 1301, upper figure); *A. obvallaris*, Haw. (Bot. Mag. t. 1301, lower figure); *A. spurius*, Haw.

3. *minor*, Linn. "Sp. Plant." p. 415.—Smaller in all its parts than the type; the whole plant when cultivated not above 6 or 8 inches high; the leaves a quarter of an inch broad, often only 3 or 4 inches long, the flower 12–15 lines long, exclusive of the ovary; the crown the same colour as the divisions, and slightly exceeding them, the divisions ¼ inch broad at the base. *Ajax minor*, Herb. and Kunth; *A. minor*, Haw. Red. "Lil." t. 480; *A. minimus*, Haw. (Bot. Mag. t. 6); *A. pumilus*, Haw. (Sweet, "Brit. Fl. Gard." ser. 2,

t. 143); *N. exiguus*, Salisb. ("Prodr." p. 200); *N. pygmæus* and *cuneiflorus*, Salisb. ("Hort. Trans." i. p. 343).

4. *bicolor*, Linn. "Sp. Plant." p. 415.—Stature of the type and flower the same size, but the corona a full bright yellow, forming a conspicuous contrast with the very pale sulphur-yellow divisions of the limb. With us at Kew this flowers later than the other varieties, and the divisions are more decidedly spreading. Ait. ("Hort. Kew.") ed. 2, p. 215; Bot. Mag. t. 1187; *Ajax bicolor*, Salisb. Herb. and Kunth.; *A. bicolor, lorifolius*, and *brevifolius*, Haw.; *N. Pseudo-Narcissus*, var. *bicolor*, Gren. and Godr. ("Fl. France," iii. p. 254.)

5. *moschatus*, Linn. "Sp. Plant." p. 415.—Flowers large, or middle-sized, at first a very pale sulphur-yellow, finally nearly white, the divisions narrower and more lanceolate than in the type, the crown the same colour as the rest of the flower, equalling or slightly exceeding the divisions. Bot. Mag. t. 1300. *Ajax moschatus*, Haw. Herb. and Kunth (*N. candidissimus*, Red. "Lil." t. 188); *A. tortuosus*, Haw. Herb. and Kunth (Bot. Mag. t. 924); *A. cernuus*, Haw. Herb. and Kunth (Sweet, "Fl. Gard." ser. 2, t. 101).

None of these five varieties are very rare in cultivation in England at the present time, but 1 and 2 are very much the commonest, both being frequently seen "double" in gardens. *N. Sabini*, Lindl., Bot. Reg. t. 762 (*Diomedes major*, Haworth), is most like No. 5, but the corona is decidedly shorter than the divisions, and the filaments are inserted higher up in the tube, and scarcely exceed the anthers. Doubtless it is a garden hybrid.

III. N. CALATHINUS (Linn. "Sp. Plant." p. 415).—Bulb ovoid, not more than half an inch thick. Leaves generally two to a scape; very slender, green, 1½–2 lines broad, concave on the face; scape 8–12 inches high, very slender, terete; flowers one or two to a stem, on pedicels 9–15 lines long, which equal or exceed the spathes, decidedly cernuous, 14–15 lines long, exclusive of the ovary; the tube half an inch long, less than a line thick in the lower half, the same colour as the rest of the flower, the divisions of the limb oblong-lanceolate, bluntish or subacute, 4–4½ lines broad at the base, decidedly reflexed when the flower is fully expanded, white, or a very pale sulphur-yellow; crown the same colour as the divisions, and the same length; the throat erecto-patent, scarcely at all plicate, with six shallow, rounded, subentire lobes; stamens biseriate, with straight filaments about half an inch long, the upper three inserted near the

mouth of the tube, and reaching nearly to the throat of the crown; style filiform, reaching nearly or quite to the throat of the crown; Red. "Lil." t. 40 and 177, Gren. and Godr. "Fl. France," iii. p. 261; *N. reflexus*, Brot. "Lus." i. p. 550. Lois. "Not." p. 165; *Ganymedes reflexus*, Herb. and Kunth; *Assaracus reflexus*, Haw.; *G. capax*, Herb. and Kunth; *A. capax*, Haw.

A very distinctly marked plant, easily known from the Daffodil and from *N. Bulbocodium* by its slender tube, biseriate stamens, long pedicels, and reflexed divisions; and from *N. triandrus*, which otherwise it very closely resembles, by its longer corona. We have seen wild specimens only from the Isle of Glenans, in Brittany, gathered by Gay and others; and from Portugal, gathered by Baron Paiva; and are not aware that it is now in cultivation in this country. We follow Redouté and De Candolle in regarding it as the calathinus of Linnæus, but the plant figured in the Botanical Magazine under that name is very different, being a slight form of *N. odorus*.

GROUP II. MEDIOCORONATÆ.—Crown half as long as the divisions, or in one or two exceptional cases, three-quarters as long.

Of this group there are seven leading types known, five of which appear to be species in the broad botanical sense, and are known definitely as wild plants, whilst the other two, though tolerably well known in horticulture, and keeping up a distinctly marked individuality, are not known anywhere in a native state.

- Divisions of the perianth distinctly reflexed . . . . . 4. TRIANDRUS.
- Divisions of the perianth spreading at a right angle from the base of the crown.
  - Large-flowered; the divisions 9—12 lines long, and the corona 5—6 lines.
    - Divisions of the limb white:
      - Crown white, half as long as the divisions . . 5. POCULIFORMIS.
      - Crown bright yellow, three-quarters as long as the divisions . . . . . 6. MACLEAII.
    - Crown and divisions of the limb both yellow:
      - Flower always solitary; leaf 6—7 lines broad, glaucous . . . . . 7. INCOMPARABILIS.
      - Flowers 1—2; leaf 3—3½ lines broad, bright green . . . . . 8. ODORUS.
  - Small-flowered; the divisions 3—6 lines deep, and the crown half as long.
    - Divisions and limb bright yellow; leaf green, cylindrical . . . . . 9. JUNCIFOLIUS.
    - Divisions and limb white; leaf glaucous, flattish . 10. DUBIUS.

IV. N. TRIANDRUS (Linn. "Sp. Plant." p. 416).—Bulb not more than half an inch thick. Leaves very slender, semi-cylindrical, 6–8 inches long, green, 3–4 to a scape, under a line broad. Scape very slender, 6–12 inches long, one or two-flowered. Spathe 6–9 lines long, the pedicels of the solitary or the uppermost flowers equalling or exceeding it. Flowers produced in its native localities in the south of Europe in April, horizontal or cernuous, measuring 9–10 lines from the top of the ovary to the top of the crown, the tube cylindrical, under half a line thick in the lower half, pure white, like the reflexed divisions of the limb, which just equal it in length, and are lanceolate, acute, 1½–2 lines broad at the base; crown pure white, obconical, 2½–3 lines deep, erecto-patent and entire at the throat. Stamens distinctly biseriate, the three lower ones inserted low down in the tube, the three upper ones near the top of the tube, the filaments straight, 3–4 lines long, sometimes, as is the style, slightly exserted from the corona. *Ganymedes triandrus* and *albus*, Haworth; *N. coronatus* and *Coornei*, DC. in Redouté, "Lil." vol. viii.; *Ganymedes Linnæi*, Kunth. "Enum." 5, p. 719; *Illus triandrus*, Haw. "Mon." p. 4; *N. pallidulus*, Graells in Bourg. "Exsic. Hisp." No. 2282.

A native of Spain, and now cultivated in this country. From the other plants of this group it is distinguishable at a glance by its very slender habit and the reflexed divisions of the perianth, in both of which it exactly corresponds with *N. calathinus*, of the group treated in our last paper, from which the difference in the size of the corona separates it. The name *triandrus* originated in a misconception, Linnæus having overlooked the three stamens of the lower row, which sometimes remain hidden down in the tube, whilst the outer three, which rise from the top of the tube, are conspicuous. The following are the principal varieties:—

1. *pulchellus*, 3–4-flowered, the corona white, the divisions bright yellow. *N. pulchellus* (Salisb. "Prodr.") p. 223; *Ganymedes pulchellus*, Haworth and Kunth (Sweet, "Brit. Flow. Gard." ser. 2, t. 99); *N. triandrus* var. *luteus*, Bot. Mag. t. 1262.

2. *cernuus*, 1–2-flowered, the flower pale yellow, the crown a rather deeper yellow, and both divisions and crown rather larger than in the type. *N. triandrus* (Bot. Mag. t. 48); *N. cernuus*, Salisb. ("Prodr.") p. 223; *Ganymedes cernuus*, Salisb., Haw., Herb., Kunth.

3. *concolor*, 2–4-flowered, the divisions and crown a concolorous

pale yellow, the same size as in the type. *Ganymedes concolor*, Haw., Herb., Kunth. (Sweet, "Brit. Flow. Gard." ser. 2, t. 113).

4. *nutans*, 2–3-flowered, the crown a deeper yellow than the divisions, crenulate. *N. trilobus* (Bot. Mag. t. 945); *Ganymedes nutans*, Haw., Herb., Kunth.

V. N. POCULIFORMIS (Salisb. "Prodr." p. 224).—Bulb an inch thick. Leaves 4 or 5 to a scape, flattish, glaucous, ¼–⅜ inch broad, rather shorter than the scape. Scape a foot high, with two not very prominent edges, one or two flowered, flowering early in April. Pedicel generally equalling, or, if there are two flowers, that of the uppermost exceeding the spathe, which is about an inch long. Flower cernuous, pure white, odorous, 18–21 lines long above the ovary; the tube cylindrical, shorter than the divisions (9–10 lines), a line thick in the lower half; the divisions an inch long, oblong-lanceolate, acute, often slightly twisted, three-eighths or even half an inch broad at the middle; the crown the same colour as the rest of the flower, half an inch deep, uniform in texture throughout, moderately plicate and crenulate at the throat. Stamens subuniseriate from high up in the tube, the filaments scarcely longer than the anthers, the latter exserted from the tube, but standing down deep in the corona. *Queltia montana*, Herb., Kunth; *N. montanus*, Lindl. (Bot. Reg. t. 123); *Tros poculiformis* and *galanthifolia*, Haw.

This is a plant which has long been well known in garden cultivation, but which has never been satisfactorily matched with wild specimens, and which, as it is said never to produce seed, is in all probability a garden product. Judging purely from its characters, the plants most likely to have produced it are those which Herbert suggested, *N. dubius* and *Pseudo-Narcissus*, var. *moschatus*. In both habit and characters it looks a good deal like a white-flowered variety of *incomparabilis*, but the leaves are not quite the same, the flower is cernuous, and frequently two are produced, and it is sweet-scented.

VI. N. MACLEAII (Lindl. Bot. Reg. t. 987).—Bulb an inch or more thick. Leaves 5 or 6 to a scape, 8–10 inches high, bright green, concave on the face, 5–6 lines broad. Scape about a foot high, subcompressed and slightly two-edged, bearing one or rarely two flowers early in April. Pedicel of the solitary flowers considerably shorter than the spathe, which is 15–18 lines long. Flower ascending as in the Daffodil, 15–16 lines deep, exclusive of the ovary; the tube cylindrical, 7–8 lines long, an eighth of an inch thick, white

tinged downwards with green; the divisions milk-white, spreading at a right angle from the base of the crown, oblong lanceolate, much imbricated, 8–9 lines long, 4½–6 lines broad bluntish or subacute. Crown 5–6 lines deep, bright yellow, very slightly plicate, half an inch broad at the mouth, slightly lobed. Stamens subuniseriate from above the middle of the tube, just reaching into the corona. Style ¾–⅞ inch long, included in the corona. Bot. Mag. t. 2588. *Queltia Macleana*, Herb., Kunth; *Diomedes minor*, Haworth.

This also, like the last, is known only in cultivation. It flowered well at Kew in 1869, both in No. 4 house and in the borders, and our description is taken from the living specimens. It resembles most the *bicolor* variety of *Pseudo-Narcissus*, from which it may be known by its smaller size, bright green leaves, and crown not more than half an inch long. Is it a hybrid between *Tazetta* and some of the varieties of the Daffodil? The *N. super-Pseudo-Narcisso-poeticus* [!] of Grenier ("Fl. France," iii. p. 255) corresponds with it, judging from the description, but we have not seen specimens.

VII. N. INCOMPARABILIS (Curt. Bot. Mag. t. 121).—Bulb ovoid, 12–18 lines thick. Leaves 3 or 4 to a scape, about a foot long, bluntly keeled, 6–7 lines broad, slightly glaucous. Scape a foot or sometimes 15–18 inches high, compressed and distinctly two-edged. Flower always solitary, produced about London late in March or early in April, more or less distinctly ascending. Pedicel 6–9 lines long, always considerably exceeded by the spathe. Expanded flower 2¼–2½ inches broad, not sweet-scented, the tube nearly or quite an inch deep, cylindrical, 1½–2 lines thick at the middle, 3 lines at the throat, the divisions spreading, slightly imbricated, an inch long, generally a rather paler yellow than the crown, oblong-lanceolate, 6–8 lines broad. Crown 6–7 lines deep, orange-yellow, nearly erect, much plaited at the throat, and furnished with six deep imbricated lobes; the mouth 8–9 lines across. Stamens subuniseriate, inserted about the middle of the tube, the filaments and anthers each three lines long, the filaments reaching to the top of the tube. Style 13–14 lines long, reaching about half-way up the crown. "Engl. Bot." edit. 3, t. 1502, Reich. "Fl. Germ." t. 819; *Queltia incomparabilis*, Haworth; *Q. fœtida*, Herb. Am. p. 311, Kunth ("Enum. v. p. 723); *Q. ampla*, Salisb.; *N. Gouani*, Roth.; *Q. semipartita*, Haw. (form with a more spreading and more deeply-lobed crown); *Q. concolor*, Haw.

Var. 1, *aurantius*.—A robust form with the crown orange, but

the divisions a pale (sulphur) yellow. *N. aurantius*, Schult. ("Syst." vii. p. 948); *N. Gouani*, Redouté, "Lil." t. 220; *Queltia Gouani* and *aurantia*, Haworth ("Mon." p. 5). Flore-pleno forms of this are the "Nonpareil" and "Butter and Eggs" of English gardens. In one specimen from Messrs. Barr and Sugden, the flower is quite three inches across.

Var. 2, *albus*.—The crown still orange, but the divisions a very pale sulphur-yellow or milk-white. *N. albus*, Spach; *Queltia alba*, Haw.; *N. albidus*, Schult.; *Q. fœtida*, var. *grisea*, Herb. and Kunth. The flore-pleno form is the "Orange Phœnix" of the gardens.

Extending as a wild plant from Spain and the south-west of France to the Tyrol, and nearly or quite as common as the Daffodil in cultivation. It quite corresponds with the Daffodil in the leaves and general habit, but even through the double-flowered forms may always be known by the crown being not more than half as long as the divisions of the limb. Herbert produced a plant which is figured at tab. 38 of vol. 29 of the Botanical Register, which is exceedingly like the var. *albus*, by fertilizing one of the varieties of the Daffodil with the pollen of *N. poeticus*. We cannot distinguish *N. Bernardi* of Henon, judging of it from Henon's figure, and from copious dried specimens, by any definite character from *incomparabilis;* but Prof. Grenier, in his excellent and full account of the French Narcissi in the "Flore de France," keeps up *incomparabilis* as a species, but regards *Bernardi* as a hybrid between the Daffodil and *poeticus*. If this view be correct, we have a true and a hybrid *incomparabilis* barely distinguishable from one another, like the true and hybrid Oxlip.

VIII. N. ODORUS (Linn. "Sp. Plant." p. 416).—Bulb ovoid, 12–15 lines thick. Leaves 3–4 to a scape, nearly a foot long, 2½–3 lines broad, very concave on the face and convex on the back, bright green or very slightly glaucescent. Scape 12–15 inches high, scarcely at all compressed or two-edged, producing early in April 1–4, generally two flowers, which are sweet-scented and horizontal or ascending, the pedicel of the upper one nearly or quite equalling the spathe, which is more than an inch long. Perianth bright yellow, 15–21 lines deep, exclusive of the ovary, the tube 6–9 lines long, more slender than in *incomparabilis*, ⅛ inch thick in the lower part, but wider at the throat, the divisions 9–12 lines long, oblong-lanceolate, acute, very slightly paler than the corona, a fresh bright yellow, 5–8 lines broad in the middle, usually imbricated for the lower half

or third. Crown 5–6 lines deep, not so much plaited as in *incomparabilis*, the throat suberect, more or less distinctly 6-lobed, ½–⅝ inch across; stamens subuniseriate in the tube, the filaments and anthers both about the same length (2½–3 lines), the latter reaching out of the throat of the tube. Style 10–12 lines long, reaching about half way up the corona. Red. "Lil." t. 157, Reich. "Fl. Germ." t. 818; *N. trilobus*, Linn. ("Sp. Plant." p. 417); *N. calathinus*, (Bot. Mag. t. 934, non Linn.); *N. infundibulum*, Poiret ("Ency." iv. p. 427); *Queltia odora*, Herb. "Amar." p. 313, Kunth ("Enum." v. p. 725); *Philogyne Campernelli, calathina, rugulosa, interjecta, terminalis*, and *triloba*, Haworth.

Var. *lætus*.—Flowers smaller, the divisions shorter and blunter, scarcely more than half as long again as the crown. *N. lætus*, Salisb. ("Prodr." p. 224, Reich. "Fl. Germ." t. 820); *N. odorus*, Curt. (Bot. Mag. t. 78); *Philogyne Curtisii*, Haw. ("Mon." p. 6).

A very distinct and well-marked plant, deservedly common in our gardens, extending in a wild state from Spain through the south of France to Italy and Dalmatia. Neither the divisions nor the crown, so far as we have seen, vary materially in colour, being always both of them a decided bright yellow. It comes nearest the typical *incomparabilis*, but the leaves are quite different, and the flowers are rarely solitary, and possess a decided fragrance. It was in order to mark the contrast in this latter point between the two that Herbert changed the name *incomparabilis* to *fœtida*, an alteration which, of course, is quite inadmissible.

IX. N. JUNCIFOLIUS (Requien in Lois. "Not." p. 14).—Bulb ovoid, about half an inch in thickness. Leaves 3–4 to a scape, of a bright green, quite cylindrical and rush-like (whence the name) in shape, 4–6 inches long. Scape scarcely exceeding the leaves, very slender, and not at all two-edged. Flowers one or two, rarely three, produced in England about the middle of April, nearly sessile in the spathes, or elevated on pedicels 6–12 lines long; tube 7–9 lines long, very slender, cylindrical, scarcely more than half a line in thickness; divisions bright yellow, patent, obovate, ⅜–½ inch long, ¼ inch broad, cuspidate, decidedly imbricated. Crown the same colour as the divisions, obconical, faintly crenulate, 2½–3 lines deep, 4½–5 lines in diameter at the mouth. Stamens subsessile, biseriate, the upper anthers at the throat of the tube, the lower three a short space below it; style scarcely exceeding the tube. Gren. ("Fl. France," iii.

p. 257); *Queltia juncifolia*, Herbert and Kunth; *N. Requienii*, Roem. ("Amaryll." p. 236); *Philogyne minor*, Haworth ("Mon." p. 6); *Q. pusilla*, Herb. ("Amary." t. 43, fig. 2); *N. assoanus*, Dufour (in Schult. "Syst." vii. p. 962); *Queltia assoana*, Kunth ("Enum." v. p. 730).

Var. *apodanthus*.—Leaves rather glaucescent, ovary sessile in the spathe, corona deeply 6-lobed, *N. apodanthus*, Boiss. and Reut. ("Diagn." p. 25); *Queltia apodantha*, Kunth ("Enum." v. 856).

Var. *gaditanus*.—Flower smaller, the divisions being scarcely longer than the crown, which is the same size as in the type. *N. gaditanus*, Boiss. and Reut. ("Diagn." iv. p. 96; Wilk. "Bot. Zeit." 1860, p. 104; Bourg. "Pl. Exsic. Hisp." No. 2042).

A native of Spain and the south of France. This is one of the smallest plants in the genus, and is too small to be generally popular. It is in cultivation at Kew, and we have seen it lately in two private collections. It is very like the Jonquil on a smaller scale, and may be readily distinguished by the crown being half as long as the divisions.

X. N. DUBIUS (Gouan. "Illust." 22).—Bulb ovoid, 9–12 lines in thickness. Leaves 4–6 to a scape, concave on the face, glaucescent, 5–6 inches long, 1½–3 lines broad. Scape 6–9 inches long, slender, decidedly compressed, and two-edged; flowers 2–6, the pedicels of the upper ones considerably exceeding the spathe. Tube cylindrical, pure white, 5–6 lines long, about a line in thickness. Expanded flower 6–9 lines across, the divisions pure white, ovate-oblong, 3 lines long, 2–2½ lines broad, imbricated, patent or slightly reflexed, subobtuse or cuspidate. Crown pure white, obconical, ⅛ of an inch deep, slightly crisped and crenulate at the throat, which is not more than 3 lines across; stamens, biseriate, subsessile, the upper three reaching into the corona. Style about as long as the tube. Reich. "Fl. Germ." t. 812; Gren. "Fl. France." iii. p. 260; Moggridge, "Cont. Flor. Mentone," t. 71; *N. pallidus*, Poir. "Ency." iv. p. 424; *Hermione dubia*, Haworth, Herbert, and Kunth.

A native of the South of France, about Toulon, Marseilles, Avignon, and Nice. We have not seen it in English gardens, but there are excellent figures in the works of Reichenbach and Moggridge, which we have quoted. On the one hand it resembles *juncifolius*, but the leaves and stem are quite different, and the flowers are a uniform pure white, instead of a bright yellow. On the other hand, it comes exceedingly near some of the multiform varieties of *Tazetta*.

GROUP III. PARVICORONATÆ.—Crown less than half as long as the divisions of the perianth.

Of this group we may define 11 leading types, as follows:

Limb of the flower horizontal, or nearly so, when expanded; anthers sessile, or very nearly so.
- Flowering in spring:
  - Crown cup-shaped, 2–4 lines deep, the edge uniform with the rest:
    - Leaves glaucous, flattish, ½–⅝ inch broad . . . . 11. TAZETTA.
    - Leaves subterete, green:
      - Flowers 1-2, nearly white, with a tube 12–14 lines long . . . . . 12. GRACILIS.
      - Flowers 3–6, yellow, with a tube 8–9 lines long . . 13. INTERMEDIUS.
  - Crown obconical, uniform, not more than a line deep:
    - Flowers white; leaves flattish, glaucous, 3–4 lines broad . . . . . 14. PACHYBOLBUS.
    - Flowers bright yellow; leaves terete, bright green . 15. JONQUILLA.
  - Crown obconical, 1–1½ line deep, the edge different in texture to the rest, and much crisped and crenulate:
    - Flowers in pairs; crown with a yellow rim . . . . 16. BIFLORUS.
    - Flowers solitary; crown with a scarlet rim . . . . 17. POETICUS.
- Flowering in autumn:
  - Leaves contemporaneous with the flowers—
    - Divisions of the flowers greenish . . . . . 18. VIRIDIFLORUS.
    - Divisions of the flower white . . . . . 19. ELEGANS.
  - Leaves produced after the flower . . . . . 20. SEROTINUS.

Limb of the flower campanulate; crown nearly obsolete; anthers shorter than their filaments . . . . . 21. BROUSSONETII.

XI. N. TAZETTA (Linn. "Sp. Plant." p. 416).—Bulb 1½–2 inches thick, copiously tunicated, with brown membranous coats. Leaves 4–6 to a scape, glaucescent, flattish, bluntly keeled on the back, ½–⅝ inch broad in the wild plant. Scape a foot or more high, furnished with two raised lines, and distinctly compressed. Flowers odorous, produced late in March or early in April near London, usually 4–8; the spathe 1½–2 inches long, the lower pedicels exceeding it. Tube ¾–⅞ inch long above the ovary, the divisions of the flower white, rather shorter than the tube, the alternate ones frequently narrower, all much imbricated, bluntish or cuspidate, 4–5 lines broad, spreadingly horizontally when fully expanded or slightly reflexed; the expanded flower in the wild plant 12–15 lines across. Crown a uniform bright yellow, 2½–3 lines deep, the edge subentire or slightly crenulate or lobed. Anthers sessile, biseriate, the upper ones protruded into the crown.

The above description applies to a plant which is very common in cultivation, and extends in a wild state from the South of Europe, through Syria, Cashmere, and the North of India, to China and Japan. There is a very large number of forms wild in the South of Europe, and known in cultivation, which do not differ from it in any important characters, and which appear to slide into one another so gradually, that it is impossible to individualize them, or characterize them in any definite manner. Of those known in our gardens thirty years ago, 46 are briefly described in Haworth's Monograph under specific names, and recently 26 of the wild ones have been fully described by Professor Parlatore ("Flora Italica," vol. iii. pp. 125–156), and 14 of them have been beautifully figured in Jordan and Fourreau's "Icones Floræ Europeæ." To these works we refer any of our readers who wish to study out the subject in full detail. All that we propose to attempt here is to characterize a few of the most striking of these various forms, and to enumerate under each of them the most important or best known figures and synonyms.

SERIES 1. *Segments of the limb white, crown yellow.*

Var. 1, *lacticolor*.—The typical plant, as just described, of which good figures will be found in Sibthorp and Smith's "Flora Græca," t. 358, and Moggridge's "Mentone," t. 23; *Hermione brevistyla* and *H. Tazetta*, *ex parte* Herbert and Kunth; *H. formosa*, Jordan, t. 189; *discolor*, Jordan, t. 183, and *pratensis*, Jordan, t. 187; *H. Trewiana*, Sweet, ser. 2, t. 118, Jord. "Ic." t. 183 (a large form, common in cultivation, with flowers nearly 2 inches across); *H. floribunda*, Haw. "Mon." p. 11, Jord. "Ic." t. 181 (large); *N. Cypri*, Sweet, ser. 2, t. 92; *H. crispicorona*, Haw. "Mon." p. 11, Jord. "Ic." t. 190 (a large-flowered form, with a deep-coloured, crisped corona, $\frac{1}{2}$–$\frac{5}{8}$ inch broad at the mouth); *H. breviflora* and *auranticorona*, Haw. "Mon." p. 11, and *N. orientalis*, Bot. Mag. t. 940 (nearly or quite the same as the last); *N. patulus*, Lois. "Journ. Bot." 1809, ii. 276, the same as *Hermione patula*, Haw. "Mon." 11, Kunth, v. p. 755 (a small form, with the expanded flower 9–10 lines across, tube $\frac{1}{2}$ inch long, leaves 3–4 lines broad); *N. syriacus*, Boiss. and Gaill, "Diagn." ii. 4, p. 96.

Var. 2, *mediterraneus*.—Differs from the last by the narrower divisions of the flower, which are not more than a quarter of an inch broad, not at all imbricated, and more lengthened out at the point. *H. mediterranea*, Jord. t. 185; *H. monspeliensis*, Jord. t. 186;

H. insolita, Jord. t. 184; *H. ganymedoides*, Jord. t. 182 (divisions slightly reflexed).

Var. 3, *polyanthos*.—Flowers 8–20, 12–15 lines across when fully expanded. Divisions pure white, 4–5 lines broad, imbricated, bluntish or cuspidate, equalling or shorter than the tube. Corona about a third as long as the divisions, at first a very pale yellow, finally becoming nearly the same colour as the divisions, slightly plicate, the edge subentire. *N. polyanthos*, Lois. "Fl. Gall." i. p. 236 DC. "Fl. Franc." p. 323, Reich. Ic. t. 367; *Hermione polyantha*, Haw "Mon." p. 11, Kunth, vol. v. p. 757.

Var. 4, *ochroleucus*.—Leaves greener and more convex on the back, and stem more nearly terete than in the foregoing. Expanded flower 12–15 lines across; the divisions milk-white, half an inch broad, much imbricated; the corona citron-yellow, with a subentire edge, nearly half as long as the divisions. *N. ochroleucus*, Lois. Gall. 1, p. 236, DC. "Fl. Franc." 5, p. 325; *Hermione tereticaulis*, Haw. "Mon." p. 8, Sweet, "Flow. Gard." ser. 2, t. 179, Kunth, v. p. 752. This var. connects *Tazetta* with the two next species.

Series 2. *Crown and segments of the limb both pure white.*

Var. 5, *papyraceus*.—Leaves glaucescent, $\frac{1}{2}$-$\frac{5}{8}$ inch broad; stem ancipitous; expanded flower 15–18 lines across; the tube greenish white, 8–9 lines long above the ovary; the divisions pure white, 3–4 lines broad generally narrowed gradually to a point, and moderately imbricated; crown 2–$2\frac{1}{2}$ lines deep, with a crenulate edge, just the same colour as the divisions. *N. papyraceus*, Gawl. Bot. Mag. t. 947 (1806), Moggridge, "Cont. Ment." t. 70, Parl. "Fl. Ital." iii. p. 125; *Hermione papyracea*, Haworth, Herb., Kunth; *N. unicolor*, Vent. "Hort. Malm." t. 26; *N. unicolor*, Tenore, "Fl. Neap." i. p. 144, t. 26; *N. niveus*, Lois. "Narciss." p. 37 (1810), Gren. and Godr. "Fl. Franc." 3, p. 260, Reich. Ic. t. 815.

Var. 6, *Luna*.—Flowers fewer than in the last; leaves less glaucous; expanded flower smaller, about an inch broad, with oblong, much imbricated lobes, *Hermione Luna*, Haw., "Revis." p. 143; Kunth, "Enum." v. 737, *Narcissus Barlæ*, Parlatore.

Var. 7, *Panizzianus*, bears the same relation to *papyraceus* that *patulus* does to *lacticolor*, that is, it is more slender and smaller in all its parts; expanded flower 9–10 lines across; corona subentire, pure

white, ⅓–¼ the length of the limb. *N. Panizzianus*, Parl. "Fl. Ital." 3, p. 128, and excellently figured by Moggridge, "Cont. Ment." t. 71.

Series 3. *Crown and segments of the limb both yellow.*

Var. 8, *italicus*.—Scape slender, distinctly two-edged, producing 6–10 flowers; expanded flower 1½–2 inches across; the divisions 8–10 lines long, about equalling the tube, narrowed gradually to a point, slightly imbricated, pale lemon-coloured; crown sulphur-yellow, 2–2½ lines deep, distinctly 6-lobed. *N. italicus*, Bot. Mag. t. 1188; *H. italica*, Haw. "Mon." p. 12; *H. italica*, Herbert and Kunth, *ex parte*; *H. præcox*, Tenore, "Fl. Neap." 1, t. 27; *H. subalbidus*, Lois. "Fl. Gall." 1, p. 236.

Var. 9, *chrysanthus*.—6–10-flowered, the flower smaller than in the last (about an inch across), the divisions of the limb more imbricated, but still narrowed to a point, a distinct lemon yellow; the crown subentire, golden-yellow, about two lines deep. *H. chrysanthus*, DC. "Fl. Fr." v. p. 323; Gren. and Godr. "Fl. Fran." iii. p. 259; *N. italicus*, Herb. and Kunth, *ex parte*; *H. chrysantha*, Haw. "Mon." p. 12; *H. Bertolonii*, Jord. "Ic." t. 192; *H. chlorotica*, Jord. t. 191 (very pale flower, only 8–9 lines across).

Var. 10, *aureus*.—Expanded flower 12–15 lines across, the divisions bright yellow, ½–⅝ inch long, 4–5 lines broad, bluntish and much imbricated; the crown subentire, about a third the length of the divisions, a deep orange-yellow; the tube exceeding the limb. *N. Tazetta*, Bot. Mag. t. 925, Redouté, "Lil." t. 17, Reich. "Ic." t. 813; *N. aureus*, Lois., Herb. "Am." t. 147, Moggridge, "Ment." t. 22; *Hermione aurea*, Jord. t. 194; *H. Tazetta*, Herb. and Kunth, *ex parte*; *H. cupularis*, Salis. "Hort. Trans." i. p. 361; *H. solaris* and *latifolia*, Haw. "Mon." p. 9.

A crowd of Haworth's species (as *H. sublutea, perlutea, flaveola, deflexicaulis*, and *trifida*) appear from the descriptions to range between our varieties 8 and 9. *N. Tazetta*, then, in the broad sense of the term, as here defined, included all the Narcissi with broad glaucescent leaves, and a cup-shaped crown, from a quarter to half as long as the divisions of the perianth.

XII. N. gracilis (Sabine, "Bot. Reg." t. 816).—Bulb ovoid, an inch or more in thickness. Leaves 4–6 to a scape, bright green, very convex on the back, not more than 2½–3 lines broad, equalling the scape. Scape slightly compressed and two-edged, a foot high, pro-

ducing 1 or 2, or rarely 3 flowers, about the last week in April near London. Lower pedicels 1½–2 inches long, about equalling the spathe. Tube 12–14 lines long, exclusive of the ovary, about a line in thickness. Expanded flower 1½–2 inches broad, pale sulphur-yellow, the divisions obovate-cuspidate, spreading horizontally, ⅜–½ inch broad. Crown 2–2½ lines deep, cup-shaped, ⅜ inch broad at the mouth, slightly plicate and crenulate, uniform in texture, a rather deeper yellow than the divisions. Anthers biseriate, subsessile, the upper three reaching into the crown. *N. gracilis*, Herb. "Amaryll." p. 316, Kunth, vol. v. p. 732, Sweet, "Fl. Gard." ser. 2, t. 136; *N. tenuior*, Curt. Bot. Mag. t. 379; *Helena gracilis* and *tenuior*, Haworth, "Mon." p. 13; *Hermione tegulæflora*, Salisb. "Hort. Trans." i. p. 363.

Well known in cultivation but never matched with any wild plant. Probably a hybrid between some of the varieties of *Tazetta* and *poeticus*. It has the leaves and general habit of *N. poeticus*, var. *radiiflorus*, but the flower is different. It may be the *N. angustifolius* of Willdenow, and if so that is its oldest name, but it is not the plant figured under that name by Curtis.

XIII. N. INTERMEDIUS (Lois. "Gall." i. p. 237, t. 7).—Bulb ovoid, an inch or more thick. Leaves 3–4 to a scape, subcylindrical, deep glossy green, about equalling the scape, 2½–3 lines broad. Scape a foot or rather more high, green, subterete. Flowers 2–5, the longer pedicels equalling the spathe. Tube 8–9 lines long, exclusive of the ovary, about a line in thickness. Expanded flower 12–15 lines across; the divisions obovate-cuspidate, lemon-yellow, 5–7 lines long, 3–4½ lines broad, little or much imbricated. Crown 1½–2½ lines deep, slightly deeper in colour than the divisions, the edge a little plaited and crenulate. Anthers biseriate, subsessile, the upper ones protruded into the crown. DC. "Fl. Franc." v. p. 325, Gren. and Godr. "Fl. Franc." iii. p. 258, Moggridge, "Cont. Mentone," t. 41; *Hermione intermedia*, Haworth, "Mon." p. 7, Kunth, v. p. 715; *N. bifrons*, Gawl. Bot. Mag. t. 1186; *Hermione bifrons*, Herb. "Amar." p. 320; Kunth, v. p. 738; *H. bifrons, primulina*, and *bicrenata*, Haw. "Mon." p. 78. (The former a variety with narrow lobes and a deep crown, the two latter with broader, much imbricated lobes, and a shallower more open crown.)

Var. *radiatus*.—Divisions of the flower oblong-lanceolate, less imbricated; crown 6-lobed. *N. radiatus*, Red. "Lil." t. 459; *N.*

tripartitus, Hornem. Hafn. p. 316; *Hermione compressa*, Haw. "Mon." p. 7.

Var. *albus*.—Expanded perianth, 15–16 lines broad, lobes broad-oblong nearly white, much imbricated, 3-8ths inch broad; corona lemon-yellow, broadly cup-shaped repand, *Hermione alba*, Haworth, Kunth. "Enum." v. 752.

A native of Spain, the South of France, and the Balearic Islands. Intermediate between *Tazetta* and the Jonquil; but both this and the last, though easy to know, when living, by their leaves and general habit, are scarcely to be distinguished from *Tazetta* in dried specimens. The three taken together may be known from all other Narcissi by the cup-shaped crowns, from a quarter to a third, or in extreme cases nearly half, as long as the divisions of the limb of the flower.

We next propose to treat of the four remaining vernal species of the Parvicoronatæ group, which taken together may be known from all other Narcissi by their saucer-shaped crowns, from a line to one-eighth of an inch in depth. Of the four, three are quite common in cultivation, and the fourth has been lately introduced.

XIV. N. PACHYBOLBOS (Durieu, "Revue Bot." ii. p. 425).—Bulb ovoid, 2 inches or more thick. Leaves 4–5 to a scape, glaucescent, about a quarter of an inch broad, flattish, with a blunt keel. Scape under a foot high, compressed and ancipitous, 5–8-flowered. Longer pedicels about equalling the spathe. Tube pure white, half an inch long above the ovary. Expanded flower 6–7 lines across, pure white, the segments of the limb not more than a quarter of an inch long, and consequently only about half as long as the tube, roundish, much imbricated, cuspidate. Crown not more than a line deep, subentire, pure white. Anthers biseriate, subsessile. Walpers' "Annales," i. p. 836; Durieu, "Expl. Alger." t. 47, fig. 1.

A native of Algeria, lately introduced to this country by Mr. Giles Munby. It comes very near to some of the small varieties of *Tazetta*. There is a specimen of a closely allied form, with narrower perianth lobes, from the Canaries, in the Kew Herbarium, gathered by Dr. Findlay, and labelled in the handwriting of Dean Herbert "Hermione canariensis, W. H." It is said to be slightly scented.

XV. N. JONQUILLA (Linn. "Sp. Plant." p. 417).—Bulb ovoid, under an inch in thickness. Leaves 1–2 to a scape, deep glossy green, 18–12 inches long, semicylindrical, channelled down the face, about

a line in thickness. Scape equalling or shorter than the leaves, slender, subterete, bearing 2–6 fragrant flowers in the latter part of April. Spathe 18–21 lines long, the longer pedicels about the same. Tube 10–11 lines long, exclusive of the ovary. Divisions of the limb a bright full yellow, spreading horizontally, when fully expanded ⅜–½ inch long, slightly imbricated, oblanceolate or obovate cuspidate. Crown saucer-shaped, not more than a line deep, about the same colour as the limb, the edge faintly crenulate (about ⅜ inch across. Anthers sessile, biseriate, the three upper ones protruded into the crown. "Curt. Bot. Mag." t. 15, Redouté, "Lil." t. 159, Reich. "Ic." t. 811; *Queltia Jonquilla*, Herbert and Kunth; *Jonquilla major*, *minor*, *media*, and *parvicorona*, Haworth, "Mon." p. 7.

This, the well-known Jonquil of the gardens, extends in a wild state from Spain, through the South of France and Italy, to Dalmatia. It has often been confounded, both in books and gardens, with *N. juncifolius*, but is much more robust in general habit, with larger and more numerous flowers, and a crown considerably shorter in proportion to the divisions of the limb. We have never seen any variation of the colour, which is a beautiful bright yellow. It is, perhaps, the most fragrant of all the species, and is often seen with double flowers in gardens. "Queen Anne's Jonquil" is a double-flowered form of this species.

XVI. N. BIFLORUS ("Curt. Bot. Mag." t. 197).—Bulb ovoid, more than an inch in thickness. Leaves about four to a scape, ⅜–½ inch broad, slightly glaucous, flattish, bluntly keeled, often more than a foot long. Scape compressed, with two salient edges, bearing typically two, rarely one or three, flowers about the beginning of May near London. Spathe about two inches long, usually exceeding the pedicels. Tube about an inch long, exclusive of the ovary; expanded flower 15–18 lines across, the divisions milk white (not so pure a white as in the next), spreading horizontally when fully expanded, ¾–⅞ inch long, ½–¾ inch broad, obovate, much imbricated, blunt or cuspidate; crown 1 to 1½ lines deep, less spreading than in *poeticus*, yellow, about a quarter of an inch across, the edge conspicuously crispato-crenulate. Anthers sessile, uniseriate at the throat of the tube. "Eng. Bot." t. 276, Red. "Lil." t. 405, Kunth, "Enum." p. 733, Reich. "Ic." t. 810; *N. poeticus*, Huds.; *N. cothurnalis*, Salisb. "Prodr." p. 225; *N. triflorus* and *dianthus*, Haworth, "Mon." p. 14.

Though this is said never to perfect its ovules and pollen, it is

very common as a wild plant, has become naturalized in abundance in many counties of Britain, and is distributed on the Continent, through France to Switzerland, Italy, and the Tyrol. *N. albus*, Mill. "Dict." edit. 8, No. 5, said to be a native of Italy, has the yellow corona of this, with the solitary flower and more spreading corona of *poeticus*. It has a flower 18–21 lines broad, with much imbricated divisions. Grenier and Godron ("Fl. Franc." iii. p. 257) describe an intermediate between this and *Tazetta*, under the name of *Tazetto-poeticus*, with smaller and more numerous flowers than in *biflorus*, and a longer, deeper-coloured crown, which is the *N. biflorus*, var. *hybridus*, of De Candolle's "Flore Française;" and Dr. Henon, who made during many years a special study of the French Narcissi, writes as follows:— "The station of Lattes, near Montpellier, is remarkable in that it offers many species mixed in the same meadow (*poeticus*, *angustifolius*, *biflorus*, *Tazetta*), as well as a considerable quantity of intermediate forms, varieties, or hybrids. In 1840, along with MM. Dunal, Delile, and Bouchet, I asserted that at this station might be seen all the passages from *poeticus* to *Tazetta* passing through *biflorus* without any appreciable line of demarcation. This assertion was strongly criticised; but verification being made on the spot with M. Delile, it was established that the fact was beyond doubt."

XVII. N. POETICUS (Linn. "Sp. Plant." p. 414).—Bulb ovoid, about an inch in thickness. Leaves 3–4 to a scape, flat, with a blunt keel, glaucescent, often a foot or more long in cultivation, $\frac{3}{8}$–$\frac{1}{2}$ inch broad. Scape a foot or more high, compressed and two-edged in the typical plant, producing near London one or very rarely two flowers in the latter part of April. Pedicel generally much shorter than the spathe, which is $1\frac{1}{2}$–2 inches long; tube white, 12–14 lines long above the ovary, and about a line in thickness; expanded flower 21–24 lines across, with a distinct and agreeable odour, the divisions a pure snow-white, obovate, blunt or cupsidate, slightly imbricated, 6–9, or sometimes in cultivation even 12 lines broad; crown 1–$1\frac{1}{2}$ lines deep, saucer-shaped, very much crisped, with a bright scarlet edge, the mouth 4–$4\frac{1}{2}$ lines across; anthers sessile, subuniseriate at the throat of the tube. "Eng. Bot." p. 275, Red. "Lil." t. 160, Reich. "Ic." 808.

Very common in cultivation, and extending as a wild plant all through the South of Europe, from France to Greece. The principal varieties are as follows:—

Var. 1, *radiiflorus*.—A more slender plant than the type, with narrower leaves, and obovate divisions of the limb of the flower so much narrowed downwards that they are not at all imbricated in the expanded flower, and also more narrowed at the point. Crown rather narrower, and consequently more erect. Flowers at least a fortnight earlier than the type, generally in the first week in April near London, or even the last in March. *N. radiiflorus*, Salisb. "Prodr." p. 225, Reich. "Icones," t. 809; *N. angustifolius*, Ait. Kew, edit. 2, vol. ii. p. 241, and figured by Curtis in the Botanical Magazine, tab. 193, under the name of *N. maialis*, which is afterwards corrected to *angustifolius*. A very handsome plant, truly wild in the Alps of Central Europe, and admitted both by Koch and Reichenbach as a distinct species. *N. spathulatus*, Haw., scarcely differs from this.

Var. 2, *stellaris* (*N. stellaris*, Haw. "Mon." p. 15, Sweet, "Brit. Flow. Gard." ser. 2, t. 132).—A late-flowering form, with the divisions of the limb, as in the last, narrowed at the base, and not imbricated.

Var. 3, *recurvus* (*N. recurvus*, Haw. "Mon." p. 15, Sweet, "Brit. Flow. Gard." ser. 2, t. 188).—A late-flowering form, with weak recurved leaves, and the divisions of the limb reflexed and crisped towards the edge.

Var. 4, *poetarum* (*N. poetarum*, Haworth, "Mon." p. 14; *N. poeticus*, var. *grandiflorus*, Herbert and Kunth).—An early form, with the expanded flower 2½ or even 3 inches across, and much imbricated divisions. *N. tripodalis*, Salisb. (*N. ornatus*, Haw.), is a similar form.

Var. 5, *verbanensis* (Herb. "Amaryll." t. 37, fig. 2; *N. verbanensis*, Roem. "Amaryll." 240).—A very slender late variety, with oblanceolate much reflexed divisions, 8–9 lines long, which are yellowish at the base.

This concludes the series of the species, with the exception of some little-known narrow-petalled autumn-flowering species, and the very abnormal *N. Broussonetii*.

The autumn-flowering species, with a star-like limb with narrow acute linear divisions, are three in number. I am not aware that any of them are in cultivation in England now.

XVIII. N. VIRIDIFLORUS (Schousb. "Moroc." fasc. i. t. 2).—Bulb small, globose, producing 1–2 slender terete fistulous leaves about a foot long, at the same time as the flower. Scape slender, 1–4 flowered.

Spathe equalling or exceeding the pedicels. Flower with a Jonquil odour, the tube 7–8 lines long, the divisions slightly shorter, greenish, linear, very acute, spreading horizontally, not more than a line broad in the lower part. Crown very minute, the same colour as the limb, with six roundish subemarginate lobes. Anthers sessile, biseriate at the top of the tube. Sims, "Bot. Mag." t. 1687; *Hermione viridiflora*, Herbert, "Amaryll." p. 328, Kunth, "Enum." v. p. 750; *Chloraster fissus*, Herb. "Mon." p. 7; and doubtless also *C. integer* of Haworth, described from a figure of Parkinson's.

A native of Spain and Barbary. It resembles the next in general habit, but may easily be known by its green flowers, and subterete leaves.

XIX. N. ELEGANS (Spach, "Veg. Phan." xii. p. 452).—Bulb roundish, an inch or less in thickness. Leaves one or rarely two, appearing at the same time as the flowers, flattish, finely channelled, a line or less broad, equalling or exceeding the scape. Scape slender, flaccid, 6–12 inches long. Spathe lax, 15–18 lines long. Flowers usually 2–4, rarely 5–6, on pedicels 6–18 lines long, produced in September or October. Tube 7–8 lines long, under a line thick, greenish white. Divisions of the limb pure white, linear, very acute, 6–8 lines long by 1½–2 lines broad three-quarters of the way down, narrowed from this to the point and base. Crown yellowish, saucer-shaped, under a line deep, entire or slightly crenulate. Anthers subsessile, biseriate near the summit of the tube. *Hermione elegans*, Haworth, "Mon." p. 13, Herb. "Amaryll." t. 41, fig. 27, Kunth, "Enum." v. p. 748; *H. autumnalis*, Roem. "Amaryll." p. 231; *N. autumnalis*, Link, "Linnæa," 9, p. 569; *N. Cupanianus*, Guss. "Fl. Sic. Synops." p. 382; *N. oxypetalus*, Boiss. "Esp." p. 606.

Var. *obsoletus* (*H. obsoleta*), Herb. "Amaryll." t. 41, fig. 28. Segments of the limb rather broader and not quite so acute.

A native of Italy, Sicily, and Algiers. Differs from the next by its more robust habit, several flowers, and leaves contemporaneous with them, but it is very likely only a variety in a broad sense.

XX. N. SEROTINUS (Linn. "Sp. Plant." p. 417).—Bulb subglobose, 6–9 lines thick. Leaves solitary or two together, filiform, subterete, usually not appearing till after the scape dies down. Scape usually one, rarely two-flowered, very slender, under a foot high. Pedicel 6–9 lines long, shorter than the spathe. Tube, segments, crown and stamens, like those of the preceding. *Hermione serotina*, Haw.

"Mon." p. 13, Herbert, "Amaryll." t. 41, figs. 29–30, Kunth, "Enum." v. p. 749; *N. deficiens*, Herb. Bot. Reg. 33, t. 22, fig. 1; *Hermione deficiens*, Kunth, "Enum." v. p. 750.

Extends from Spain through the South of Europe to the Barbary States, Greece, and Palestine. Flowers in September and October.

XXI. N. Broussonetii (Lagasca, "Nov. Gen." p. 13).—Bulb ovoid, as large as a hen's egg. Leaves about four to a scape, 4–6 lines broad, about as long as the scape. Scape about a foot high, 4–8-flowered. Pedicels 6–10 lines long, shorter than the spathe. Tube 8–9 lines long, exclusive of the ovary, under a line thick, greenish at the base, white upwards. Divisions of the limb subcampanulately erecto-patent, pure white, oblong-lanceolate, about half an inch long by a quarter of an inch broad, narrowed suddenly to a bluntish point. Crown almost entirely confluent with the apex of the tube. Stamens biseriate, the lower filaments 1½–2 lines long, their anthers just reaching the top of the tube, the upper filaments 2½–3 lines long, reaching half way up the divisions. *Hermione obliterata*, Haworth, "Mon." p. 13; *N. obliteratus*, Willd. in Schult. "Syst." vii. p. 981; *Chloraster obliteratus*, Roem. "Amar." p. 214; *Aurelia Broussonetii*, Gay, "Ann. Sc. Nat." sér. 4, tome ix. part 2, p. 96.

A very rare and little known plant, gathered at Mogadore by Broussonet, and lately refound by Dr. Leared, but not yet introduced into cultivation. It is exceedingly well-marked from all the other Parvicoronatæ by its nearly obsolete crown, subcampanulate flower, and developed filaments; in fact, it is a plant so distinct in habit and characters, that M. Gay proposed that it should have a genus to itself, and certainly if any species here included should be separated generically, this is the one that has most claim.

TIME OF FLOWERING.

November.—The different forms of *N. Tazetta* if potted early in September and grown on in heat, now begin to open their flowers. The best and earliest for forcing are *N. papyraceus* (Paper white), and *N. Tazetta fl. pl.* (Double Roman).

December.—Many of the forced forms of *N. Tazetta* now in flower.

January.—*N. Tazetta*, in variety and forced roots of *N. poeticus*, now in bloom. The last very beautiful. In some sheltered sunny

spots in the South of England *N. Pseudo-narcissus* and *N. Tazetta* open a few flowers in this month.

FEBRUARY.—*N. Bulbocodium* in pots, grown in a cold frame, now very beautiful and effective for conservatory or window decoration. The different forms of *N. Tazetta* now blooming freely indoors both in water and pots. *N. Pseudo-narcissus*, vars. *Telamonius* and *maximus* often open their great rich golden flowers early in this month in sheltered districts upon warm soils.

MARCH.—All the varieties of *N. Pseudo-narcissus* flowering freely together with a few flowers of *N. odorus*. *N. Bulbocodium serotina*, *N. B. conspicua* now very showy. Several of the varieties of *N. Tazetta* now blooming freely in the open border. There are a few odd flowers on *N. incomparabilis*.

APRIL.—Nearly all the species and varieties are now in flower, some large clumps of the Great Double Daffodil being shield-like masses of yellow, bright as burnished gold. *N. odorus*, *N. gracilis*, *N. biflorus*, *N. intermedius*, *N. poculiformis*, *N. poeticus* (single varieties). Several masses of *N. Tazetta var.*, and the delicate creamy yellow form of *N. triandrus* are now blooming. A small bed of (late planted) *N. Bulbocodium* is now very bright and beautiful.

MAY.—The hot sun has taken the beauty out of many of the late kinds; the double forms of *N. poeticus* are, however, now very beautiful, and useful for bouquets and button-holes. A good display of bloom may be insured for this month by late planting such roots as *N. Bulbocodium*, *N. poeticus*, *N. triandrus*, *N. Pseudo-narcissus* vars. and *N. Tazetta*, taking care to select a deep rich moist border facing north or north-east. If backed by a high wall or belt of trees or shrubs all the better, as the flowers last much longer if shaded from the midday sun. It requires but little trouble to insure a supply of choice and fragrant flowers from this genus alone, for, at least, seven months out of the twelve, and when the autumn blooming species are reintroduced to our collections, we may hope to wreath the year with Narcissus as is now done in the case of the Rose.

Select Descriptive List of Authors, Works of Reference, and Illustrated Periodicals, containing valuable information and figures of the Species of Narcissus.

Aiton's Hortus Kewensis, 2nd ed. (1810), Vol. II. p. 214. Short Latin descriptions, English references to figs. and descriptions, earliest date of culture, or date of introduction, when known, popular names, time of blooming, etc.

Bentham's Handbook of the British Flora, see p. 519 for descriptive account of the British species.

Botanical Magazine, I., II., III. and IV. Series (1763—90) contains coloured plates and excellent descriptions of many species and varieties. (See "Pritzel.")

Botanical Register (1815—47). Coloured plates and descriptions of many species and forms. (See "Pritzel.")

Decandolle's Flore Française, V. p. 320. Excellent Latin descriptions of all the species natural to French soil.

Gardeners' Chronicle (1869). Excellent and concise "Review" of the entire genus, by J. G. Baker, F.L.S., embodying characteristic descriptions and copious notes and references to all the known species. [This Review is reproduced, with emendations, in the present work.]

Gardeners' Magazine (1874), pp. 598 and 624. Popular descriptive account of the best cultivated forms, with hints on culture and wood-cut figures.

Garden, Vol. VII. (1875), p. 3. A popular descriptive account of the species and varieties in cultivation, by Mr. J. Niven, Curator of the Botanic Gardens at Hull, with woodcut figures.

Gerarde's Herbal (1596). Quaint English descriptions of many species and varieties then in cultivation in old English gardens. Many of the species are recorded in "Hort. Kew." and elsewhere as having been cultivated or introduced in 1596 because they are named in this book, but they were doubtless introduced long before this date.

Grenier and Godron's Flore de France, Vol. III. (1855—6), p. 253. Excellent French descriptions, references, and localities for all the species authenticated as indigenous to French soil.

Haworth's Monograph, Sweet, Fl. Gard., Series II., Vol. I. Latin descriptions of nearly all the species and varieties now in cultivation. This monograph is concise and handy for reference, but no notice must be taken of his so called genera and species, while many of his varieties are taken up from figures only.

Herbert's Amaryllidaceæ (1837). Descriptions, coloured plates and diagrams of nearly all the species, together with copious and interesting notes on some curious forms.

Jordan and Fourreau's Icones Floræ Europeæ. This magnificent work contains about twenty splendid coloured plates of the different varieties of N. Tazetta.

Kunth, Enumeratio Plantarum, Vol. V. (1850), pp. 704, 750. A general review of the entire genus, containing Latin descriptions of nearly all the species and many varieties, together with copious notes and remarks on nomenclature, etc.

Linnæus, Sp. Plant. p. 414. Latin description of many species.

Loiseleur (Deslongchamps), Flora Gallica (1806—10). Good descriptions of the French species and varieties.

Loudon, Encyclopædia of Plants (1841), pp. 240, 241, 242. List of species, references to figures, native country, date of introduction, height, colour, time of flowering, together with excellent reduced wood-cut figures and tabular descriptions.

Loudon (Mrs.), Ladies Flower Garden of Bulbous Plants (1844), pp. 167—179. Popular descriptions, synonyms, and coloured figures of many species and varieties.

Miller's Gardener's Dictionary (1724). Contains popular descriptions of many species, and copious cultural details. Miller was one of the most noted of English gardeners and lived in the early part of the 18th century. He succeeded his father as gardener to the Apothecaries' Company when the old Botanic garden at Chelsea contained the richest collection of cultivated plants in the metropolis.

Moggridge, Contribution to the Flora of Mentone. Excellent coloured plates and descriptions of several species and varieties found in the vicinity of Mentone.

Parkinson, Paradisus Terrestris (1629—56), p. 612. Quaint but characteristic English descriptions and excellent wood-cut figures of nearly all the species and varieties now grown. This fine old work deserves to be better known, and the following excellent description of it will be acceptable to all interested in the early history of English gardening and the culture of hardy flowers. "Few works of real importance devoted to gardening appeared till 1629, when the 'Paradise,' of Parkinson, was first published. This admirably-written and profusely-illustrated folio, contemporary with the first edition of 'Mr. William Shakespeare's, Comedies, Histories, and Tragedies,' is a real treasure, and contains the best account extant of the then state of Horticulture and Floriculture in England. In the British Museum there are four copies, in excellent preservation, of this valuable work, the title of which is as follows:—'Paradisi in Sole Paradisus Terrestris, or a garden of all sort of pleasant flowers, collected by John Parkinson, Apothecary of London, 1629, fol. Printed by

Humphrey Lownes and Robert Younge, at the sign of the Starre, on Bread Street Hill.' The title-page, engraved on copper, by Switzer, represents the Garden of Eden, with many fanciful designs and representations of trees and flowers. The text consists of 612 pages, numerous wood-cuts of trees, fruits, and flowers, and is prefaced by a portrait of the author. In this work we get a fair notion of the flowers and trees common to English garden in the beginning of the 17th century. Among others, the author mentions 94 kinds of Narcissus, 50 Hyacinths, 31 Crocuses, 70 Irises, 66 Anemones, 20 varieties of Ranunculus, besides many kinds of Gilliflowers, Roses, Lilies, and those sweet-smelling plants which we now only look for in what is called an old-fashioned garden."

Parlatore, Flora Italica, Vol. III. pp. 125—56. Excellent descriptions of all the most distinct of the Italian forms of Narcissus.

Paxton's Botanical Dictionary (1868), pp. 386—7. Native country, date of introduction, height, colour, time of flowering, &c.

Phillips, Flora Domestica (1823), p. 246. Essay on the culture and poetry of Narcissus.

Phillips, Flora Historica (1824), p. 97. Excellent essay on the early history, poetry, and culture of Narcissus.

Pritzel, Index Iconum Botanicarum (1866), see pp. 735—8 and supplement p. 191 for list of plates of the different species and varieties published up to date of issue. This excellent work is universally used as a general reference or index to plates of all known genera and species, just as "Steudel" is employed as a guide to the nomenclature adopted up to date of publication.

Redouté's Liliaceæ contains figures and excellent descriptions of many species and varieties.

Reichenbach, Icones Floræ Germanicæ, Vol. I.—VI. (1834—54). Coloured figures and descriptions of species and varieties indigenous to Germany.

Steudel, Nomenclator Botanicus (1841), pp. 180—3, for the synonymy of genera and species into which the genus had been divided by different authors up to date of publication.

Sweet, Flower Garden, Series I. (1823—29), Series II. (1831—38). Coloured figures and excellent descriptions of many species and varieties.

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